DOCUMENT RESUME

ED 403 866 IR 018 210

AUTHOR	Phillips, Linda L.
TITLE	A Model Scholar's Outpost on the Electronic Frontier. Final Performance Report, October 1993-September 1995.
INSTITUTION	Tennessee Univ., Knoxville. Univ. Libraries.
SPONS AGENCY	Department of Education, Washington, DC.
PUB DATE	95
CONTRACT	R197D3002-94; R197D30002
NOTE	177p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	*Academic Libraries; *Access to Information; *Computer Networks; Document Delivery; *Educational Resources; Electronic Libraries; Environmental Education; Higher Education; Information Technology; *Integrated Library Systems; Internet; Library Automation; Microcomputers; Online Catalogs; Online Searching; Optical Data Disks; Users (Information); *Workstations
IDENTIFIERS	Electronic Media; *University of Tennessee Knoxville; User Training

ABSTRACT

This final report describes a two-year project to create a library-supported Scholar's Workstation that provides convenient, timely user access to information in or near the scholar's workplace, particularly in relation to environmental studies. The University of Tennessee, Knoxville (UTK) librarians demonstrated current and emerging information technologies in an electronic version of a branch library by using the Scholar's Workstation as a prototype for the individual desktop workstation. Objectives accomplished during the project included: (1) making a wide selection of electronic resources--the library OPAC, citation databases, electronic journals, an interactive interlibrary loan (ILL) form, and Internet services--available on microcomputer workstations at four sites external to the library; (2) installing appropriate software and developing menus to access electronic information sources; (3) training users for self-sufficiency in searching, accessing, and managing online information resources; (4) involving library school students in training users, providing on-site assistance and technical support, and data gathering and analysis of the project; (5) providing document delivery through several alternative options; (6) describing usage patterns; and (7) assessing the value of the Scholar's Workstation. Appendices include the Scholar's Workstation promotional poster and brochure; sample pages from the documentation notebook; sample web pages; slides from an American Library Association presentation; excerpts from project diaries; survey results; survey pre- and post-tests; and program press clippings. A financial status report is also included. (SWC)

ED 403 866

SCHOLAR'S WORKSTATION

FINAL PERFORMANCE REPORT

A Model Scholar's Outpost on the Electronic Frontier

October 1993 – September 1995

Research & Demonstration Grant under HEA II-A
U.S. Department of Education
College Library Technology and Cooperative Grants Program

Part I — General

- INSTITUTION RECEIVING GRANT
  The University of Tennessee, Knoxville
  University Libraries
  149 John C. Hodges Library
  Knoxville, TN 37996-1000

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- GRANT NUMBER R197D30002 AND CONTINUATION R197D30002-94
  Project period: 10/01/93 – 09/30/95
  Budget period: 10/01/93 – 09/30/94; 10/01/94 – 09/30/95

GRANT AMOUNT AWARDED:	Year 1:	$ 122,298	Year 2:	$ 109,716
FEDERAL DOLLARS EXPENDED:		$ 117,628		$ 104,477
MATCHING DOLLARS EXPENDED:		$ 56,169		$ 60,646
TOTAL AMOUNT EXPENDED:		$ 173,797		$ 165,123

IR018210

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A Model Scholar's Outpost on the Electronic Frontier
October 1993 - September 1995

Part II - Narrative Report

Project Accomplishments

The goal of the two-year project, A Model Scholar's Outpost on the Electronic Frontier, was to create a library-supported Scholar's Workstation that provides convenient, timely user access to information in or near the scholar's workplace. Using the Scholar's Workstation as a prototype for the individual desktop workstation, UTK librarians demonstrated current and emerging information technologies in an electronic version of a branch library. Campus locations where students and faculty engaged in study of the environmental sciences were the focus of the project. Sites included Environmental Engineering in the College of Engineering (CE/EE); the Energy, Environment and Resources Center (EERC); the College of Communications (COMM); and the Center for Environmental Biotechnology (CEB).

The Scholar's Workstation Team included Gayle Baker (Electronic Services Coordinator), Project Coordinator; Jeff Heck, Project Librarian; Jane Row, Social Sciences Reference Coordinator; Martin Courtois (Life Sciences Librarian), Science Reference Coordinator; Richard Pollard (Associate Professor, School of Information Sciences), Research Consultant; Tamara Miller (Systems), Library Systems Consultant; Angie LeClercq, User Education/Public Information and Linda Phillips (Networked Services), Project Director. Graduate assistants who served as Onsite Team Members (OTMs) were Heather Walton, Jerry Curry, Iko Bullington, Alan Goslen, David King, John Noel, Aaron Dobbs, Robb Scholten, Hua Li, Matt Benzing, and Alice Kirby. The Team appreciates special assistance provided by Alan Goslen, Jeff Barry, Flossie Wise, and Flora Shrode.

Objectives of the project included:

1. Make a wide selection of electronic information resources available on microcomputer-based workstations at four sites external to the library.

2. Identify and install appropriate software. Develop menus for access to information resources.

3. Train users to become self-sufficient in searching, accessing and managing online information resources.

4. Involve library school students in training users, providing on-site assistance and resolving routine technical problems, as well as in the data gathering and analysis of the research project.

5. Provide document delivery through several alternative options.

6. Describe usage patterns for the Scholar's Workstation and determine if users change their patterns of use of selected resources after the introduction of the Scholar's Workstation.

7. Assess the value of the Scholar's Workstation to participants in the study.

The Scholars' Workstation Team met all of the goals for the project. In October 1993 Jeff Heck was hired as Project Librarian. Jeff assembled a team of graduate students from UTK's School of Information Sciences to create materials, develop policies and procedures, and work directly with users at the four remote sites.

An article published in *Library Hi Tech* by Jeff Heck and Gayle Baker[1] contains an in-depth review of progress on each of the project objectives. By late February 1994 fully configured workstations were installed at the four sites. Workstations provided access to the library OPAC, citation databases, electronic journals, an interactive ILL form, and many Internet services. The Team promoted availability of the workstations by developing a poster (Appendix 1) and brochure (Appendix 2) that were distributed at the sites and during training sessions. Awareness of the project was furthered by articles in campus and library news media.

The UTK Libraries provide access to more than two million volumes for a student population of 26,000. A GEAC 9000 and GEAC 8000 supply OPAC modules in circulation, acquisitions, and cataloging. A DEC InfoServer system with 12 CD-ROM towers supplies localized access to more than 70 compact disks in the library, which employs an Ethernet LAN. Several CD-ROM titles are networked in the central library through the DEC InfoServer system. Through an additional InfoServer hardware and software, and customized menus developed for the Scholar's Workstation at the four sites, users had access to the library OPAC, and CD-ROM databases that included *Enviro/Energyline*, *General Science Index*, *PAIS*, *Marcive Monthly Catalog*, *NTIS*, *EI: Energy & Environment*, *Agricola*, *Medline*, *CAB Abstracts*, and *Newsbank*. In addition, Scholar's Workstation users received access to FirstSearch and Dow-Jones services; FirstSearch card block searches proved extremely useful for access to citation databases. The Dow-Jones service was acquired in place of Nexis after Mead Data placed a moratorium on academic accounts.

Initial workstation configuration at each site included software that was easy to use, functional, cost-effective, and compatible with existing software. Each 80486/66 Mhz IBM ValuePoint was equipped with PC-DOS 6.1, Windows 3.1, and PC Tools 1.0. Software included Tattam's WinSock 1.0, Hgopher Windows Client 2.4, Mosaic for Windows version 1 and following, Netscape 0.9 beta and following, and Trumpet for

Windows 1.0 Revised final beta 10. Personal bibliographic management software was provided at the two research sites where more manuscript preparation occurred. DougMenu (Dmenu 168.zip) was used as the DOS-based menuing software for the InfoServer products (UTK's system for providing citation database access).

Over 117 training sessions were held by the Project Librarian, Project Coordinator, and OTMs to introduce users to Workstation mechanics, the library online system, other UTK information resources, and Internet-accessible sources. Presentations at the sites featured IDEA: Instruction in the use of the workstation and its information tools; Documentation of all services provided; Expert assistance from subject specialists at the UTK Libraries; and Access to electronic information services. Documentation included several Macintosh-produced specialized instruction sheets featuring the Scholar's Workstation logo, as well as existing library guides. (See Appendix 3 for samples.) Some of the specialized instructions were used by reference librarians to answer in-library questions.

Graduate students from the UTK School of Information Sciences were scheduled at each of the four sites. With training and supervision from the Project Librarian the Onsite Team Members (OTMs) worked with users individually and in groups. They provided training, resolved routine technical problems, and gathered data. During semester breaks and in the summer, OTMs created training materials and assisted with data analysis for the research component. A total of 11 students helped provide Scholar's Workstation services. Students appropraching graduation were often selected for their knowledge of search interfaces, library resources, computer operation, and the reference interview process. They communicated with the Project Librarian via e-mail, office telephone and cellular phone.

Scholar's Workstation users received document delivery service via several options. The Workstation provided access to the library's electronic interlibrary loan request form. ILL materials, as well as materials from the library collection, were delivered by Library Express, the library's document delivery unit. The Team also provided information about using commercial document suppliers. One site, EERC, established its own account with NTIS for the delivery of government technical report literature.

Pre-and post-implementation surveys were used as a statistical basis for determining usage patterns for the Scholar's Workstation, and to determine if users changed their patterns of use of some of the resources it made available. Data from the surveys shows that the Workstations were of great value at some of the sites, particularly for graduate students. Usage patterns were based in part on the availability of needed resources in electronic format.

Expenditures

Costs for the project librarian, key personnel, and graduate students were budgeted at $ 67,396 and expenditures were $ 66,688 for Year 1. For Year 2 salary and wages costs were projected at $ 76,717 with $ 75,747 actually expended. A total of 11 graduate assistants worked on the project over the two years. Mileage costs to CEB on the Pellissippi campus were budgeted at $ 3,327 over the two-year period, but only $1,719 in expenditures were recorded; although CEB was staffed by a graduate assistant throughout the project and regularly visted by the Project Librarian, it is likely that some of the mileage was simply not recorded. Travel to professional conferences for dissemination of the project results was budgeted at $5,000, with $5,023 expended.

Total equipment costs for the two-year period were projected at $ 44,000 with $ 42,353 actually spent. The DEC InfoServer and client software costs were less than anticipated, and software for the Workstations at the sites and for the Project Librarian were more than projected. Purchase of an LCD panel was originally budgeted to facilitate presentations at the remote sites; however, a laptop computer was also needed to make presentations possible at the sites in group rooms where no workstation existed. Because the library purchased several LCD panels for use with group instruction, the Team selected a laptop for portability and borrowed LCD panels from the library. The Unix workstation, budgeted at $7,500 resulted in an expenditure of $6,839.

Supplies were provided by the library for a total of $3,000 over the two-year period. In the category of contractual services, all of the CD-ROM products provided by the library were used for the project. During Year 1 the Dow-Jones service was acquired in place of Nexis after Mead Data placed a moratorium on academic accounts. According to the plan for Year 2 we established an account for NewsNet. However, little interest materialized in this service, and the NewsNet account could only be used in a classroom setting. The full text Dow-Jones service continued to be offered as an alternate service for access to current environmental information at a general level. Expenditures for contractual services during both years matched the cost projections.

Finally, the Other category included costs for network connections, monthly port charges, and personal bibliographic management software. Expenses of $ 2912 closely paralleled the projected costs of $ 2880.

Impact of the Project

Like most universities, The University of Tennessee, Knoxville (UTK) has seen dramatic increases in the number of IBM-compatible and Macintosh-based workstations. When the Scholar's Workstation project began in 1993, workstations were frequently used for little more than word processing, e-mail, and in some cases, connection with the library online catalog. The UTK campus network is still developing, and consists primarily of departmental Ethernet and Novell LANs. Departments must absorb the costs of network installation and monthly access. Graduate students typically share a very small number of workstations within a department. At the inception of the Scholar's Workstation project, many academic departments did not have connections to the campus network, and the majority of faculty and students did not use electronic mail.

Library services have become increasingly centralized over the past two decades. A major consolidation of collections and staff occured in 1987 with the opening of the Hodges main library that incorporated services to the sciences provided by branch libraries in previous years. Now, reference staff at the central library and five remaining branches provide on-site assistance using the online catalog, database searching, and CD-ROM indexes that are networked in the central library through a DEC InfoServer system. Perception still exists on the campus, particularly among science and technology faculty, that researchers use central library services environmental protection and restoration. Physical access to the library is a challenge for this site. The Environmental Engineering program, offered through the Department of Civil and Environmental Engineering, is engaged in research projects spanning air quality, environmental restoration, groundwater management, municipal and industrial treatment operations, solid and hazardous waste, and water resources. There are 12 faculty and 150 graduate students in CE/EE who conduct research with five other campus departments. The four sites offer a combination of teaching and research programs that encompass a range of information needs spanning scientific data to social policy, and differing approproaches to information access.

The Scholar's Workstation methodology was to place one workstation at each site, configure the workstations to access relevant electronic resources, provide graduate students from the School of Information Sciences for assistance 15 hours per week, and provide links to Reference specialists. Scholar's Workstation team members gave instruction through individual and group sessions, and gathered statistics about the use of the Workstation. Services encompassed CD-ROM access, including *Environmental Abstracts* (the Libraries hold a microfiche collection containing many of the documents it indexes) and other files with an environmental studies focus; online database access through FirstSearch and Dow Jones services; Internet access, including preconfigured telnet sessions, FTP, Gopher, WWW browsers; interlibrary loan services, including an electronic form and document delivery; online assistance and linking to Reference personnel; and, onsite training in CD-ROM and Internet tools. FirstSearch permitted platform-independent access to databases, unlike the InfoServer which allowed only DOS-based access. Thus, FirstSearch could be used at the considerably less often than they used the branch libraries, and that more specialized service is needed.

The project team sought a multidisciplinary subject for research and demonstration of the Scholar's Workstation. Particular emphasis on the sciences would strengthen information access in the disciplines where research activity is intense, yet library resources are thinly stretched to support information needs. Environmental studies was selected as an appropriate subject focus for experimentation. The four campus departments targeted to participate in the project all responded with enthusiasm to the concept of a Scholar's Workstation.

The College of Communications, through its School of Journalism, offers an emphasis in science communication, with a course in environmental reporting and six other graduate and undergraduate science communication courses. The Energy, Environment and Resources Center (EERC) conducts research in the areas of environmental policy, pollution prevention, waste management, and information systems technology. Dedicated to exploring and resolving critical issues concerning energy, environment, natural resources, and technology, the EERC involves faculty and students in interdisciplinary research and problem solving. Conducting research with faculty and graduate students from many other campus units is typical for EERC.

The Center for Environmental Biotechnology is the most physically remote of the participant sites, located approximately 15 miles west of the campus on a technology corridor linking UTK with the Oak Ridge National Laboratory. More than 50 graduate students and post-doctoral fellows, technicians, and faculty use the center's facilities for investigations in the scientific and socioeconomic aspects of

Workstation, in a scholar's office, or at home, by anyone with access to the Internet via modem and a card block search password, or in the library at workstations with open block accounts.

Heck and Baker[2] describe the impact of the project on its user population. Users of the workstations came to the project with widely varied educational backgrounds and computer experience. Many of the Communications students, for example, were undergraduates with limited exposure to effective search processes and electronic resources. For these users, handouts were developed that focused on the subject of the class; these handouts follow searches for one topic through each of the available tools. Personalized assistance was provided to help the students make use of the resources. Most users at the Center for Environmental Biotechnology were completing graduate degrees or are post-doctoral fellows and have more experience with the available resources. For these users, new information tools were introduced during staff meetings, with training provided in small-group sessions. The approach to and level of training varied according to the audience.

For users of the workstations during times that team members were not onsite, guides were prepared in paper format. These guides focused on the CD-ROM products that covered environmental studies, and also included documentation on the various Internet tools provided, resulting in a binder three-inches thick. Because the comprehensive guide was not often used (probably it's size was intimidating), the individual instructions were marked for HTML (Hypertext Markup Language) and supplied through the Scholar's Workstation home page,[3] which automatically loaded during use of the WWW browsers. To increase ease of use and the functionality of

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the guides, screen captures of CD-ROM products were placed as expandable graphics at each step in the guides--after permission was received from the vendors to do so.

Gopher and WWW links for the project were identified and made available to Workstation users in electronic "folders," and on customized Web pages. These materials, as well as the guides, were collected and organized on a site workstation, using HTML Assistant, then transferred to and served from a Silicon Graphics Indy R4000SC workstation that serves the library Web. Physical access to this workstaion become more difficult as the project progressed because of its increased popularity for developmental work by all departments. The temporary solution for remote access was to purchase an X-Windows terminal emulator, PC X-Ware version 2.0, which allowed X-Windows Display Manager (XDM) connection from the project librarian's PC at any time. The display presented by the emulator was virtually identical to the display at the Indy, which alleviated any need for retraining. The purchase of a Sun Sparcstation 5 running SunOS 5.3 in Year 2 of the project led to the use of alternative Web servers, transfer of a PERL-scripted electronic ILL form from an older machine to the Sun, and the serving of electronic journals and Web pages for EERC.

Once the Gopher and WWW pages for the project were developed, team members checked, updated, and added new information resources continuosly. To remain current, lists and newsgroups were regularly scanned by team members, as were announcements of new resources via the Web and trade publications. Netsurfing led to new resources. New links were funneled to one team member, who placed them in an evaluation area on the home page. The links were commented on by team members and site members, and shifted to more permanent areas of the page or discarded. Links were surveyed monthly and during regular use for continuity. Sample Web pages from the Scholar's Workstation are shown in Appendix 4.

Media attention to the Internet inflated expectations for some users who felt that links should be available to everything they had previously used in paper form. Careful discussion with site clientele before and during training sessions helped explain the strengths and weaknesses of the Internet. One user wanted to read materials provided by Russian Web servers, which required the development of a script, using PC Tools, to change the Mosaic settings to Cyrillic font, then change them back automatically when done. The onsite team members invested much energy in requests of this nature.

A secondary problem that evolved from providing electronic data and access to the Internet was that researchers wanted to transfer files to peers located in other cities. Though a number of solutions were available, including transmission using MIME-compliant mail utilities, uuencode, and FTP, selection and use of the method was often complicated by the variety of specific equipment and software in place and by the lack of knowledge about the capacity of the systems held by the researchers seeking the transfer. FTP proved to be the best solution in some cases where the Workstation could function as a temporary DOS-based FTP server; PINE software on the VAX system was useful in other cases as a MIME-compliant mailer.

The transfer of documents was only one area in which team members provided software, training, and support not currently available on a timely and convenient basis through the campus computing center. For example, team members supplied personalized training in creating HTML documents. As a result of this training, the EERC site provided

Chart 1: Activity Reported Through OTM Diaries

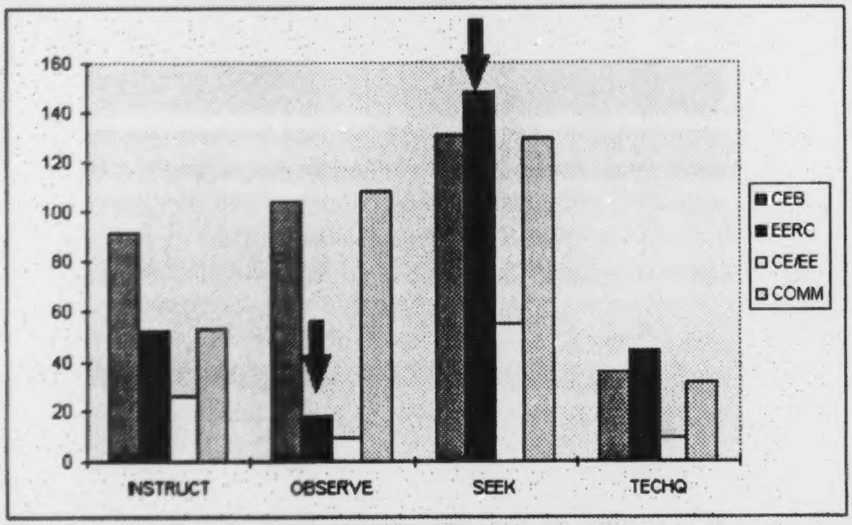

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Chart 1 shows the activity reported through the diaries of team members at each site quantified in four categories: instruction, observation, information seeking, and technical questions. Some sample diary entries are shown in Appendix 6. The greatest number of information seeking interactions occurred at EERC, followed by CEB, while the greatest amount of instruction and observation was done at CEB. In all of the categories the least activity occurred at CE/EE. The College of Communications had high activity in the information seeking and observation categories.

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Chart 2: Comparison of Internet, E-mail and CD-ROM Use

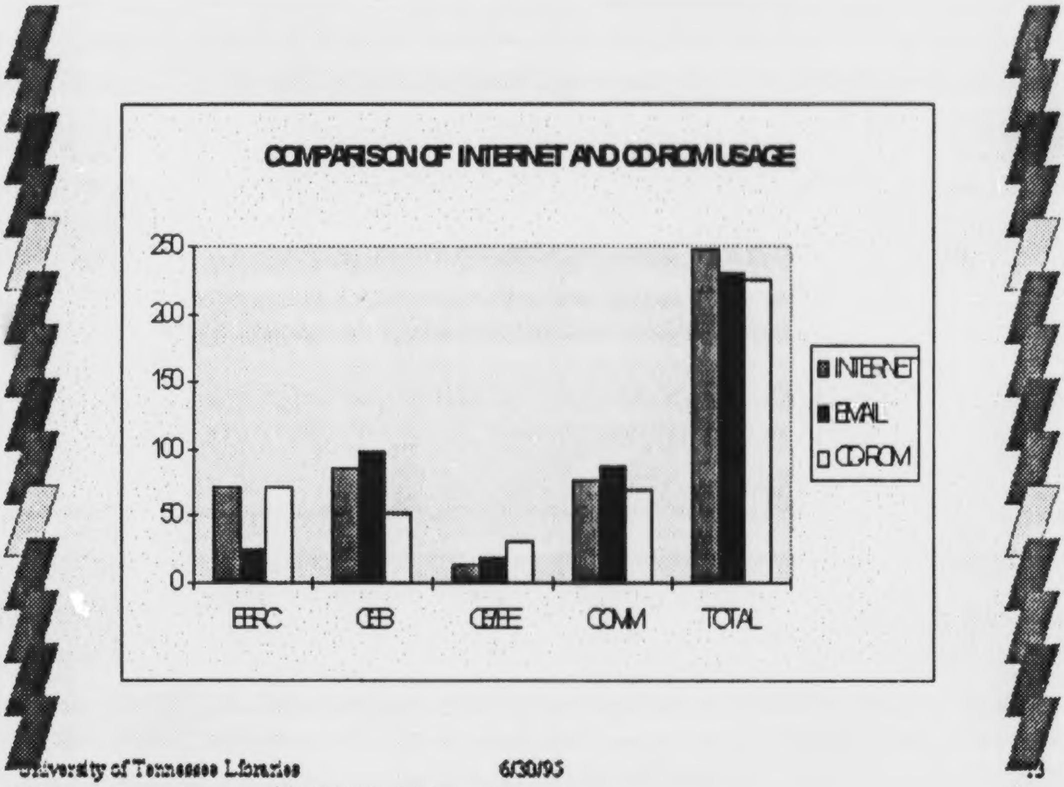

Chart 2 compares the usage of Internet resources (WWW, Gopher, FTP, Telnet, etc.), e-mail, and CD-ROMs reported at each of the sites. Patterns were similar at CEB and COMM, with e-mail use higher than other services. However, while Internet and CD-ROM use were about evenly matched at EERC, CD-ROM was the most popular of the three services at CE/EE.

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Chart 3: Total Workstation Activity

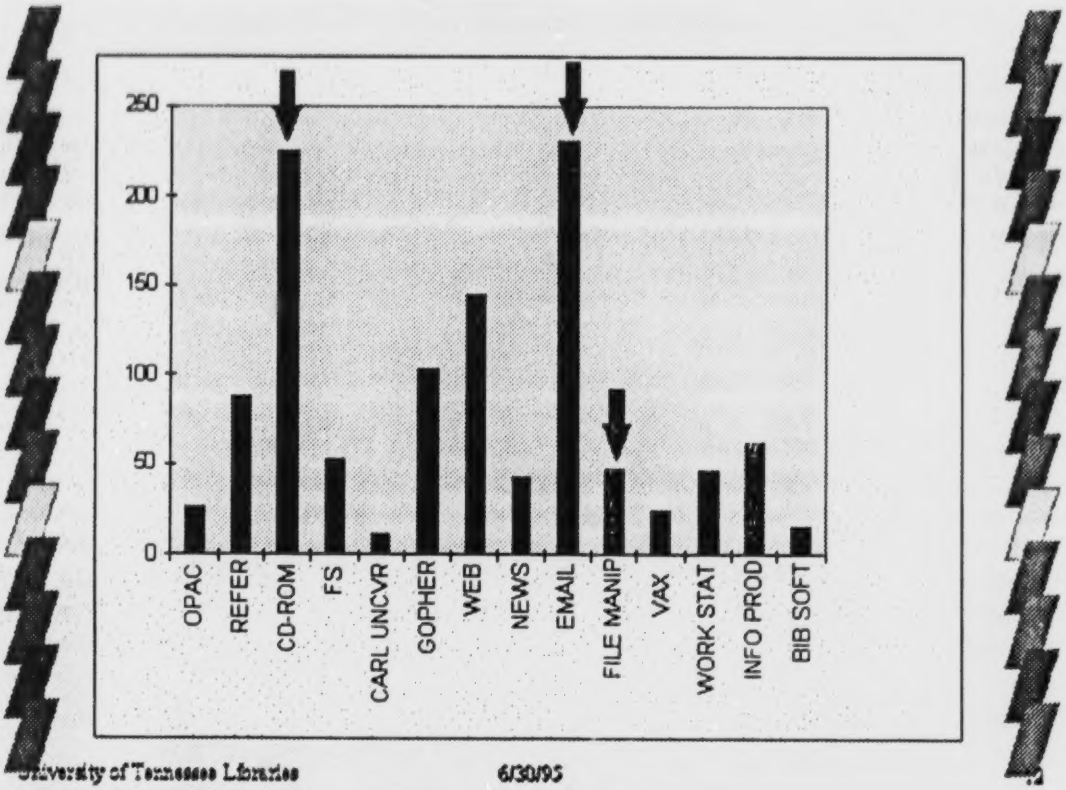

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Chart 3 reports total workstation activity at all sites; the most frequently used services were CD-ROMs and e-mail.

Data from CD-ROM log software is summarized in Chart 4 (following page).

Chart 4: CD-ROM Use by File

	EERC	CE/EE	COMM	CEB
ABI Inform	0	1	63	6
AGRICOLA 1984-1993	17	18	6	78
AGRICOLA 1970-1984	0	3	2	25
Applied Science and Technology Index	55	65	10	151
Dissertation Abstracts 1988-Present	18	43	46	27
Dissertation Abstracts 1861-1987	0	0	0	1
Environmental Abstracts	91	82	13	106
ERIC (Education)	47	13	65	3
General Periodical Index	14	4	98	23
National Newspaper Index	3	1	41	3
Monthly Catalog (U.S. Government Publications)	32	14	9	10
National Trade Data Bank	9	3	4	3
Newsbank 1986-Present	24	21	39	8
Newsbank 1981-1985	4	4	4	2
NTIS 1985-	37	45	11	38
NTIS 1983-85	4	6	1	7
PAIS Internat'l	42	10	49	11
America: History and Life (North America)	15	3	7	1
Art Index (includes architecture)	2	1	4	4
Books in Print Plus	17	4	11	5
Ulrich's	16	0	2	25
LC Subject Headings	5	0	1	21
General Science Index	24	15	5	76
Historical Abstracts (except North America)	1	7	2	1
Humanities Index (religion, literature, philosophy)	1	7	17	2
Medline 1993-1994	23	13	7	173
Medline 1991-1992	9	7	7	70
Medline 1989-1990	6	8	5	33
Medline 1987-1988	2	7	4	25
Medline 1985-1986	1	6	5	23
Medline 1983-1984	6	4	4	17
Medline 1980-1982	1	5	5	18
Medline 1976-1979	6	0	2	22
Medline 1970-1975	2	0	2	12
Medline 1966-1969	2	0	1	10
Medline Tutorial	2	0	0	3
MLA Bibliography	2	2	9	3
CINAHL	5	1	2	1
PsycLIT	5	3	39	1
Social Work Abstracts	2	0	5	1
SOCIOFILE	14	3	65	2
Sports Discus	10	11	17	9
EI: Energy and Environment 1992-1994	52	75		50
Compendex	13	12		
Cambridge Life Sci. 1991-				240
Cambridge Life Sci. 1986-1990				82
GeoRef 1988-				3
GeoRef 1980-1987				1

The most popular CD-ROM products were *Applied Science and Technology Index, Environmental Abstracts, General Science Index, Medline, Ei:Energy and Environment*, and *Cambridge Life Sciences*. Patterns for high use were mirrored at several of the sites. One exception, was the CEB use of *Medline* and *Cambridge Life Sciences* that far outstriped use of those databases at other sites.

Statistics on the number of accesses to the various Scholar's Workstation pages from December 1994 through May 1995 show 13,586 accesses to the directory HTML page; 8,984 accesses from outside the university; 6,534 accesses to the *Forum* (EERC e-journal) directory HTML page; and 2,402 accesses to the *InSites* (EERC e-journal) directory HTML page.

Scholar's Workstation participants were given pre-and post-tests regarding their use of and attitudes toward the Workstation and its resources. A comprehensive discussion of survey results reported by Alan Goslen appears in Appendix 7; pre-and post-test instruments are included in Appendix 7A and 7B, respectively.

Observations about the statistical data suggest that increases in WWW and e-mail use may have been influenced by the exponential increase in the coverage of these subject areas by the popular media. Some increase in the use of CD-ROM products may have resulted from the announcements of these products through campus publications and *The UTK Librarian*, a library newletter for the campus. Some local increase in use of all products may have resulted from increased awareness of local LANs and Internet tools on the part of administrators and faculty.

desk further improves upon the convenience. In the electronic information age scholars must learn new skills to acquire information--the links with experts who can teach about Internet use, downloading, file manipulation, commercial document, and the methods for creating new information via listservers and Web site creation were shown to be a popular outcome of this project.

The Scholar's Workstation model is continuing on several levels at The University of Tennessee, Knoxville. An electronic services librarian position has been redefined to direct 50 per cent of the librarian's time toward establishing remote information services at campus locations. In Fall 1995 librarians worked with College of Human Ecology faculty to provide onsite information services for faculty and students. The Electronic Services Librarian is helping faculty and graduate students take the Scholar's Workstation to the next level envisioned by this project--to the individual desktop.

Another outcome of the Scholar's Workstation project is that the library's Information Technology Forum series has increased the number of presentations that it sponsors to teach practical information technology access skills in a computer lab environment. Members of the campus community may select among an array of one hour sessions relating to topics such as *Current Contents*, Database Searching Basics, Incorporating the Internet into the Classroom, Introduction to LibLink (the library's online system), Web search engines, and access to subject resources on the Internet.

Finally, the University Libraries are building upon the success of the Scholar's Workstation through individual librarians' liaison to campus departments. Subject librarians are providing many of the services to faculty and students at the individual desktop that Scholar's Workstation staff provided at the environmental sites. Advising faculty and students about finding relevant information sources via the Internet, teaching about the advantages of using FirstSearch from office or home, and making presentations to groups about electronic resources are frequently done by librarian subject specialists, often individually, and sometimes in collaboration with an electronic services librarian. While many of these services would have developed independently of the Scholar's Workstation, and are now being offered at libraries across the country, the UTK project was an early example of remote information service. The project gave campus-wide visibility for new roles of librarians in bringing information resources closer to the scholar's desktop.

Notes

1. Heck, Jeff and Gayle Baker, "The Scholar's Workstation Project at The University of Tennessee," *Library Hi Tech* 13(3):55-66 (1995).

2. *Ibid.*, 60.

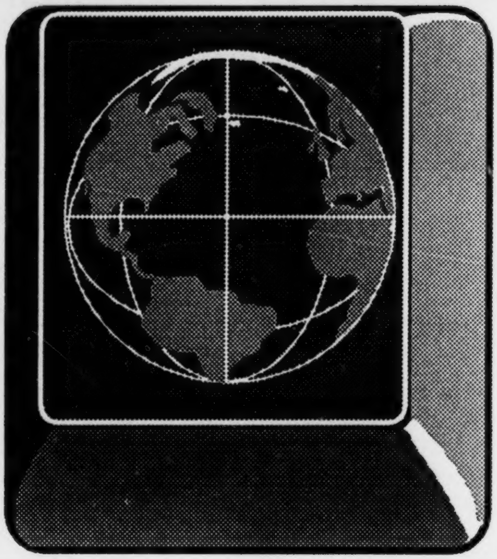
3. Scholars Workstation Web Pages (http://scholar.lib.utk.edu/sws/project.html)

4. *Ibid.*

Appendix 1: Scholar's Workstation Poster

"TAP IN" To a World of Knowledge

SCHOLAR'S WORKSTATION



This **Model Scholar's Workstation on the Electronic Frontier** connects globally to the Internet and locally to CD-ROM and online databases.

Sites Involved:

- **College of Communications**
- **Energy, Environment and Resources Center (EERC)**
- **Center for Environmental Biotechnology (CEB)**
- **Civil and Environmental Engineering**

PLEASE SEE OUR BROCHURE, OR CONTACT:

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Supported in part by a U.S. Department of Education Grant

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Appendix 2: Scholar's Workstation Brochure

Sites Involved

The College of Communications, through the **School of Journalism**, offers an emphasis in science communication. Environmental reporting and six other graduate and undergraduate courses provide training in the coverage of environmental issues.

The **Energy, Environment and Resources Center (EERC)** conducts interdisciplinary research in pollution prevention, waste management, policy, and information systems technology. EERC examines and resolves critical issues concerning energy, environment, and technology, through cooperative work with other campus units.

The **Center for Environmental Biotechnology (CEB)** began investigating scientific and socioeconomic aspects of environmental protection and restoration in 1987. More than 50 researchers work at the site on the technology corridor between Oak Ridge National Laboratory and UTK.

The College of Engineering **Environmental Engineering** program spans air quality, environmental restoration, groundwater management, solid and hazardous wastes, municipal and industrial treatment operations, and water resources. Twelve faculty and more than 100 graduate students work in the group, located in Ferris Hall.

Project Team

Gayle Baker, Project Coordinator
Flora Cobb
Martin Courtois
Jeff Heck, Project Librarian
Angie LeClercq
Tamara Miller
Linda Phillips, Director
Richard Pollard
Jane Row

Project supported in part by the U.S. Department of Education

University of Tennessee, Knoxville Libraries
Paula T. Kaufman, Dean of Libraries
1015 Volunteer Blvd.
Knoxville, TN 37996-1000

January 1994

UTK is an EEO/AA/Title IX/Section 504 employer.
E01-6010-016-94

SCHOLAR'S WORKSTATION

A Model Scholar's Outpost on the Electronic Frontier

- Offering a model individual workstation of the future, the project provides seamless access, at remote sites, to a wide range of library resources and services.
- Developed at
  The University of Tennessee, Knoxville

An Electronic Branch Library

The Model Scholar's Workstation on the Electronic Frontier offers access to library resources and services at a site convenient to faculty, researchers and students. Funded in part by the U.S. Department of Education, the study will test the usefulness of an electronic branch library for faculty and students.

Environmental Science Emphasis

Four sites on and near campus are test areas: the Energy, Environment and Resources Center (EERC), Environmental Engineering, and the College of Communications on campus, with the Center for Environmental Biotechnology (CEB) on Pellissippi Parkway. Each covers environmental issues.

Electronic Information Access

Participants may use many library research tools: CD-ROM databases such as the Environment/Energy CD Plus, PAIS, and NTIS, among others; the Online Library Information System (OLIS), which includes access to the online catalog; and commercial online databases such as FirstSearch.

Students and faculty will also have access to the international network community (Internet) through the OLIS Gopher, a network navigation tool that connects to universities, governments and businesses around the world.

User requests for materials the library does not own will be submitted by means of an electronic request form, and requested materials will be delivered to the site.

The library will also offer specialized services to the sites, such as mediated searches of commercial databases, commercial document delivery, current awareness, and links to reference librarians for help in resolving complex information needs.

All stations will be linked to a CD-ROM server in the John C. Hodges Library through the campus network.

Other means of providing quick and effective service will be tailored to each site.

Equipment

IBM Value Point 486-66DX2 machines with 17-inch color monitors and Ethernet cards will provide rapid access to each of the resources offered.

Audience

At the EERC and CEB, all researchers and staff will be eligible. At Environmental Engineering, faculty, graduate students and undergraduate students may use the workstation. At the College of Communications, priority will be given to faculty and graduate students in the School of Journalism. Undergraduates in Journalism involved in environmental reporting and in environmental policy may also participate.

Links to Library Experts

A graduate student will be assigned to each site for up to 15 hours per week to provide help and training. The Project Librarian will tour all sites regularly and serve as a telephone contact for questions and problems.

Documentation is located at each site for most of the resources offered on the workstation.

Training is available both in group and individual formats through the course of the project.

Policy

Use is limited to 30 minutes per person when others are waiting to use the terminal. No software may be loaded onto the machine without permission of the Project Librarian and the representative at the site.

Downloading is encouraged; printing is an option.

One goal of the project is to encourage all participants to take advantage of the computer facilities available to them for communication and research. Accounts for the VAX, UNIX and CMS systems may be obtained through the UT Computing Center.

For more information, contact:

Jeff Heck, Project Librarian
150 Hodges Library
974-0087
heck@utklib.lib.utk.edu

Gayle Baker, Project Coordinator
974-3519
baker@utklib.lib.utk.edu

Appendix 3: Sample Pages from Documentation Notebook

Guides and Documentation

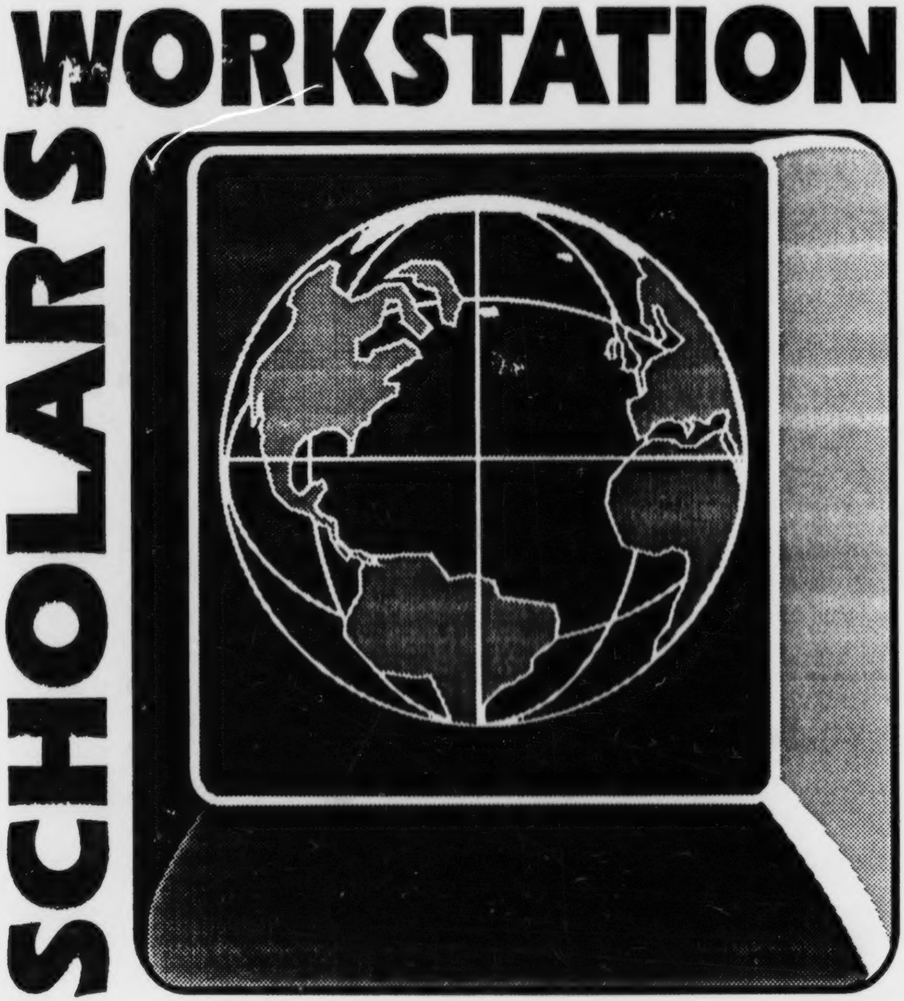
WORKSTATION
SCHOLAR'S

Table of Contents

SCHOLAR'S WORKSTATION

Project Policies and Information

Guide:
Database Searching

3 CD-ROM Guide:
Applied Science and
Technology Index (ASTI)

4 CD-ROM Guide:
Dissertation Abstracts

5 CD-ROM Guide:
Enviro/Energyline

6 CD-ROM Guide:
General Science Index (GSI)

7 CD-ROM Guide:
Marcive

8 CD-ROM Guide:
National Technical
Information Service (NTIS)

9 CD-ROM Guide:
Public Affairs
Information System (PAIS)

10 Additional Project-Related
CD-ROM Guides

11 Miscellaneous CD-ROM Guides

12 FirstSearch

13 Hodges Library Guides

14 VAX Help Sheets

15 Internet Information:
Newsreader, HGopher, Listservs

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AVERY READY INDEX INDEXING SYSTEM

Policies and Procedures

Onsite Team Members

Reporting problems

A written log will be maintained at each site to serve as a permanent record of hardware and software problems with the workstations. The Onsite Team Member is responsible for entering in the log a description of each problem with the workstation and its resolution.

Problems that are considered emergencies should be reported immediately by telephone to the Project Librarian. E-mail to the Project Librarian is the appropriate vehicle for non-urgent questions, comments, suggestions, etc. about the workstation. (address is in%"scholar@utklib.lib.utk.edu" from the VAX)

Emergency problems relating to the site will also be reported to the local contact.

EERC - Gail Farris - 974-4251
Communications - Dr. Jim Crook - 974-5155
CE/EE - Dr. Bruce Robinson - 974-7730
CEB - Dr. Jim Fleming - 974-8080

Other Communications Methods

Each Onsite Team Member will create diary entries as appropriate, which should be sent to the SCHOLAR@UTKLIB.LIB.UTK.EDU Micro-Vax account.

Library Links

Ready reference questions, such as telephone and address information needs, may be answered by contacting Reference Services in Hodges Library.

All questions not readily answerable by the project team members at the sites must be forwarded to a Hodges Reference librarian in the applicable subject area for further development. The specialists may also be contacted by the user or by the project staff to perform searches at the site. Searches requiring expenditure of funds must be handled through the Reference subject specialists.

These librarians and their subject specialties are:

Martin Courtois: 974-8693 (office) courtois@utklib.lib.utk.edu
Life Sciences, Biology, Zoology, Toxicology, Medical and Environmental Sciences

Flora Cobb: 974-4415 (office) cobb@utklib.lib.utk.edu
Physical Sciences, Chemistry, Geology, Life Sciences/Biology

Flossie Wise: 974-0016(office) wise@utklib.lib.utk.edu
Engineering (all except Chemical), Energy, Environment, Geology

Jane Row: 974-4699(office) row@utklib.lib.utk.edu
Communications, Public Policy, Political Sci.

The Reference desk is 974-4171. Please try this number only after trying the numbers above AND attempting to reach the Project Librarian: 974-0087 or 599-5353.

Objectives for onsite team members

Training: Team members will provide training on the site, using training formats established for the project and individual effort as applicable. Guides for many of the CD-ROM databases and services will be held at the site for reference. Future training will include the use of HTML for tutorials.

Reference assistance: Team members will provide reference assistance as needed, employing CD-ROM database searches, searches using Internet navigational tools, OPAC searches, and calls to other resources as needed. Subject specialists in the Reference Department of Hodges will be the main points of contact. Other contacts must be used as appropriate and as available to the team member.

Team members will provide cooperative reference service with the user. Library Express will provide photocopying and transfer of Hodges Library and Interlibrary loan materials.

Onsite team members will promote all library services, utilizing printed materials and word of mouth.

Computer Accounts

It is the intent of the project to facilitate the use of computer accounts on campus. Team members will support the use of VAX by offering training and assistance. CMS and UNIX support may be added in the future. Requests for more extensive training in the use of the accounts should be forwarded to the project librarian.

Maintenance:

Team members on site will be expected to perform minor maintenance operations weekly, including cleaning the equipment. Keyboards must be rubbed down with alcohol and a cloth; monitor glass and exterior and the CPU exterior must be cleaned with a non-abrasive cleanser. Maintenance may also include the deletion of unneeded files and correct placement of strayed files.

Power:

Workstations are to be left running at all times unless the site contact prefers otherwise.

After-Hours Access

Access to the sites after hours will not be available except through arrangement with the site contact. Encourage all project participants to make use of dial-up access to their VAX accounts if they have proper equipment.

Hours are:

EERC - normal hours are 8 a.m. to 5 p.m. - EERC researchers will have access after hours through prior arrangement with their office.

CEB - available 24 hours to CEB researchers.

CE/EE - approximately 9 a.m. to 10 p.m. M-Thurs.; 9 a.m. to 4 p.m. Friday. Lab is locked and alarmed outside these hours. A monitor will be present in the lab to offer assistance during most operating hours.

Communications - 8 a.m. to 5 p.m.

Inclement Weather

If the University is closed due to inclement weather, Onsite Team Members are not required to work. If the University is open in spite of snow or icy conditions, Onsite Team Members should come to work if it is safe to do so. When a Team Member determines that he or she is unable to travel safely he or she should contact the Project Librarian as soon as possible to inform him of this decision.

Absence

In the event of illness, Onsite Team Members should contact the Project Librarian as early as possible. The Project Librarian will provide coverage for the site.

When planning vacation or other absence, Onsite Team Members should inform the Project Librarian as far in advance as possible.

Employment

Onsite Team Members are hired on a semester-to-semester basis.

Team Members are expected to provide a minimum of two week's notice to the Project Librarian when leaving the position.

Funding for the employment of Onsite Team Members is provided by the grant. Cancellation of the grant, though unlikely, will result in the elimination of all positions relating to the project.

CIP:

Blue sheets will be provided on site for assistance with CIP searches. CIP may be used ONLY with undergraduate and/or graduate students.

Workstation User

Eligibility:

At the EERC and CEB, all employees of each site will be eligible. At Environmental Engineering, faculty, graduate students and undergraduate students may use the workstation. At the College of Communications, priority will be given to faculty and graduate students in the School of Journalism. Undergraduates in Journalism involved in environmental reporting and in environmental policy may also participate.

Reporting problems:

When a problem with the workstation occurs, a specific procedure should be followed to facilitate resolution of the problem. Please follow the steps outlined below when you discover a problem.

Provide the following information to the Onsite Team Member or the Project Librarian:

- A summary of the problem, for example, "The computer is frozen; no keys I push make any difference."
- The location of the machine, for example, "Electrical Engineering."
- A description of what happened, for example, "I tried to exit the Enviro/Energyline CD-ROM and the mouse pointer would not move."
- The exact wording of error messages, if any, for example, "301."
- A summary of attempts made to resolve the problem, for example, "I tried pressing ALT-Q, but the computer did not respond."

If the Onsite Team Member is present, inform him or her of the problem. If not, contact the Project Librarian by telephone or e-mail:

Jeff Heck - Project Librarian
974-0087 (office)
599-5353 (cellular)
heck@utklib.lib.utk.edu

Food and Beverages

Food and beverages are not permitted at the workstations. The Onsite Team Member may determine policy for food and drink at other areas of the site in conjunction with the site contact.

Time of use at the Workstation:

Each site will determine its hours of operation. Within those hours, workstation users may remain on the machine indefinitely, provided no one is waiting for access. As soon as someone begins waiting, use is limited to 30 minutes. Sign up sheets are an option if warranted.

Downloading vs. Printing:

Downloading is encouraged whenever possible. Printing is possible if needed. Guides available on the site provide instruction for both processes.

Software Used on the Workstations:

Use of software placed on the project workstations must be approved by the site representative and by the project librarian. Requests for loading of appropriate software will be considered; however, the nature of the grant prohibits open use of the workstation.

FirstSearch blocks:

Onsite team members will hold blocks of FirstSearch passwords for distribution to users at the sites.

Document Delivery:

ILL forms may be submitted electronically. Once located, the materials will be delivered to the site via Library Express.

Content Analysis: (Journalism site only)

Analysis may be performed only on environmentally related issues.

Project Leaders

Response Time: The Scholar's Workstation Team is committed to responding within 24-hours to reported problems. Within 24 hours, the Project Librarian, Project Coordinator or one of the Onsite Team Members will either correct the problem or provide an estimate of the length of time necessary to do so.

Backups:

A backup of all files will be maintained by the project librarian and will be updated as needed.

Scholar's Workstations

Name	**Phone**	**Email**
Team Members		
Linda Phillips, Project Director	974-4702	phillips@utklib.lib.utk.edu
Gayle Baker, Project Coordinator	974-3519	baker@utklib.lib.utk.edu
Jane Row, Reference Librarian for Communications	974-4699	row@utklib.lib.utk.edu
Flora Cobb, Reference Librarian for Physical Sciences	974-4415	cobb@utklib.lib.utk.edu
Marty Courtois, Reference Librarian for Life Sciences	974-8693	courtois@utklib.lib.utk.edu
Flossie Wise, Reference Librarian for Engineering Sciences	974-0016	wise@utklib.lib.utk.edu

Street address for all team members: 1015 Volunteer Boulevard, 37996-1000

Onsite Team Members		
Heather Walton, Communications and Environmental Eng.	974-0087	walton@utklib.lib.utk.edu
Jerry Curry, CEB	974-0087	curryj@utkvx.utk.edu
Robb Scholten, EERC	974-0087	scholten@utkvx.utk.edu
Site Representatives		
Gail Farris, Senior Research Assistant, EERC 329 Stadium Hall, 37919	974-4251	gfarris@utkvx.utk.edu
Dr. Jim Fleming, CEB 10515 Research Drive, Suite 200, 27932-2567	974-8080	fleming@utkvx.utk.edu
Dr. Bruce Robinson, Environmental Engineering 73 Perkins Hall	974-7730	
Dr. Jim Crook, Communications 300 Communications Bldg.	974-5155	crook@utkvx.utk.edu

2/3/94

Introduction to CD-ROM Searching

BASIC GUIDE

WORKSTATION
SCHOLAR'S

START a CD-ROM Session

To Reach the Menu ________ Page 1
Path of the search ________ Page 1
CD-ROMs available ________ Page 2
Organization of CD-ROM Databases ________ Page 2

SEARCH

Begin a search ________ Page 3
Downloading the search ________ Page 3

REFINE a Search

Boolean Operators ________ Page 4
Truncation ________ Page 5
Thesaurus ________ Page 5
Index ________ Page 5
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Search Options

    Subject Heading Searches ________ Page 6
    Field Searches ________ Page 7

Search Examples

    Subject Heading Searches ________ Page 8
    Free-Text Searches ________ Page 9

LOCATE Materials

To Locate a Copy of Articles, Books ________ Page 7

EXIT a CD-ROM session ________ Page 10

TROUBLESHOOTING a "Frozen" Screen ____ Page 10

ENTER - How to Start the CD-ROMs:

1. ___ If the screen is at the **Windows** Menu: Place the tip of the mouse arrow on the icon and click twice, quickly.

> NOTE: *If the screen displays anything else*, exit to the **Windows** Menu by using **ESC**, then reacting to the exit options that are offered. (Some software may require use of the **F10** key to exit. Miscellaneous windows may have to be closed by clicking the mouse pointer in the top left box of the window.)

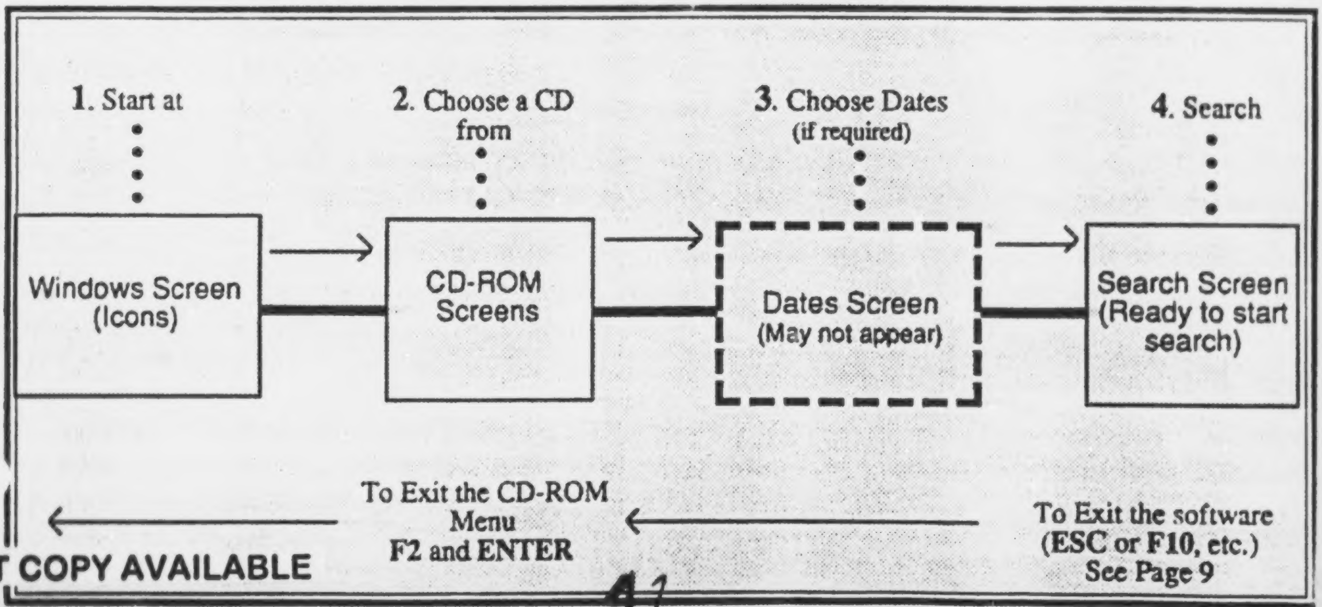
2. ___ At the **UTK Libraries CDROM Network** screen, choose a specific CD-ROM by typing in the number or letter to the left of the entry.
   For example, to begin the Sciences category, press C. (Turn to Page 2 for a full list)

   B) Literature, History, Arts
   C) Sciences, Medicine, Agriculture
   D) Social and Behavioral Sciences

3. ___ If the next menu offers a choice of years, choose one or more than one group of years. (Silver Platter (one of the vendors who produce the CD-ROM databases) allows the choice of more than one group of years at a time. Other vendors allow the search of one group of years only.)
   For example: 1965-1987
   1987-1991

4. ___ The initial screen of the search software should be appear. Each CD-ROM will display slightly different forms and contents, but most commands will appear at top and bottom of the screen.

Working through the menus for a normal search


1. Start at
2. Choose a CD from
3. Choose Dates (if required)
4. Search
Windows Screen (Icons)
CD-ROM Screens
Dates Screen (May not appear)
Search Screen (Ready to start search)
To Exit the CD-ROM Menu F2 and ENTER
To Exit the software (ESC or F10, etc.) See Page 9

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CD-ROM Menus

1st Level

1. ABI Inform
2. **Dissertation Abstracts**
3. ERIC
4. **Infotrac**
5. LC Subject Headings
6. **Monthly Catalog (Marcive)**
7. National Trade Data Bank
8. **Newsbank**
9. Sports Discus

B. Literature, History, Arts
C. Sciences, Medicine, Agr.
D. Social and Behavioral Sciences

2nd Level

B. Literature, History, Arts
  1. MLA Bibliography
  2. America: History and Life
  3. Historical Abstracts
  4. Art Index
  5. Humanities Index

C. Sciences, Medicine, Agr.
  1. **AGRICOLA**
  2. **Applied Science and Technology Index**
  3. **Enviro/Energyline**
  4. **General Science Index**
  5. **Medline**
  6. **NTIS**
  7. **Nursing and Allied Health (CINAHL)**

D. Social and Behavioral Sciences
  1. **PAIS International**
  2. PsycLIT
  3. Social Work Abstracts
  4. SOCIOFILE

Database Organization

CD-ROM Database -

A collection of **records** providing either citations to or full-text of journal articles or other documents. The databases provide information on a national or international scope, so they do not match exactly the holdings of the University Libraries. Databases may be specific as to subject, such as the Applied Science and Technology Index, or more general in scope, such as Infotrac.

Record -

Composed of **fields**, a record provides information about a single journal article or document. A record may contain a variety of different fields depending on the database.

Field -

A standardized arrangement of information about a journal article or book, such as the TITLE, AUTHOR, JOURNAL, DATE, etc. that form the record. Many databases contain ABSTRACTs, supplied either by the database vendor or by the author of the article. The abstract offers a concise summary of the article or document.

Enviro / Energyline CD-ROM

BASIC GUIDE

Enviro/Energyline contains energy and environmental information taken from three indexes:

- Environmental Abstracts (1971-) human and technological impact on the environment.
- Energy Information Abstracts (1971-present) focuses on R&D, resources, consumption, conservation, economics, and industrial application of energy sources and technologies.
- Acid Rain Abstracts (1984-1990; merged with Environmental Abstracts in 1991) focuses on the sources, causes, and effects of acid deposition; covers economic, political, health, and natural resources management issues.

•To Search •

Use the arrow keys to highlight SEARCH on the bar menu at the top of the screen. Press **ENTER** to open the search workspace.

For best results, type in terms without using the prefixes given in the window on the left. The system will automatically use full text searching. **If you do use prefixes, they must be in lower case letters.**

To maximize retrieval, use synonyms linked by the **or** operator:

electromagnetic fields **or** emfs
tennessee **or** tenn **or** tn

To link together two different terms or to narrow a search, use the **and** operator:

tennessee **and** recycling

If you have already created individual sets for your terms, you can use **and** to combine sets:

1. ft=tennessee or tenn or tn
2. ft=recycling or recycle

#1 and #2

Caution: Do not use the combine sets (cs=) command.

Limit search by publication date with **da=yymm**, where *yy* is the last two digits of the year and *mm* is the month. For example, to retrieve articles later than 1989 type:

da>8912

A search by date may also be combined with a regular search for keyword, etc.

Example: leachates and da>8912

• To View Citations •

To view the results of a search, make sure the set you wish to examine is highlighted. Use arrow keys to highlight previous sets. Press **F10** to see the brief citations. To see abstracts, select titles of articles by pressing **ENTER** to highlight them.

To select a large number of titles:

Press **CTRL-X** and **PAGEDOWN** to select the entire screen(s), or
Press **CTRL-X** and **END** to select the entire set (up to 200 entries).
Press **ENTER** to complete the selection process.

To deselect a title, move the cursor to the desired title and press **DELETE**.
To deselect all titles, press **CTRL-D**.

After you have selected your citations, press **F10** to view the abstracts.

•To Download Citations•

To download citations to a floppy disk, press **F10** to view citations and select the articles you wish to download.

Press **F4**.
Choose FULL citation.
After FILE NAME type ***a:your_filename*** (example: **a:search1**)
Press **ENTER**.

•To Print Citations•

If the Full Citation is displayed on the screen, pressing **F5** will print the single record. If the brief citations are displayed, pressing **F5** will print all selected titles (or all the titles in the current window if none is selected).

When printing from the brief citations screen, the system will ask whether you want to print the brief or full citation. **Always choose full citation**; the brief citation will not give you enough information to find the article.

When the "Printing Information" window appears, change the form length to "**00**" to conserve paper.

•Envirofiche Collection•

If the record on the screen (1) has an asterisk by the accession number (*89-44567) **and**, (2) is from the Environment database (see upper right hand corner of the abstract on the screen) **and** (3) was published since 1981, then the full text is available on microfiche in the Documents and Mircoforms Department in Hodges.

Note: The name of the database appears above the accession number on the full citation screen, **but** the database name will not appear on the printout.

•To Exit•

To exit from Enviro/Energyline, press **ALT-A**, then **ALT-Q**.

•Summary of Commands•

F1	Help	**End**	Bottom
F3	Clear Workspace	**+**	Advances to next citation (when viewing several citations at once)
F5	Print		
F10	View Citation		
Ctrl-J	Jump to a citation	**-**	Returns to previous citation (when viewing several citations at once)
Ctrl-X	Extended select		
Ctrl-D	Extended delete		
Esc	Closes window and cancels search	**PgDn**	Advances to next page
		PgUp	Returns to previous page
Del	Deselects	**$ or ***	Truncation
Home	Top	**?**	Truncates to a single character

Rev. 2/15/94 Teresa Berry and Heather Walton

Enviro / Energyline CD-ROM

ADVANCED GUIDE

SCHOLAR'S WORKSTATION

•Truncation•

Use the truncation symbols ($ and *) to find terms with different endings:

recycle$
recycle*

will pick up recycle, recycles, recycling, recyclable, recycled, etc.

? can be used to substitute for a single letter:

magneti?ation

will find instances of "s" or "z" in the spelling

Caution: Avoid truncating single syllable words; this may retrieve irrelevant citations.

•The Browse Function•

The Browse function allows you to scan various indexes, such as author, subject, title, and keyword. Browse is particularly helpful in finding multiple spellings and different versions of names, titles or terms.

Using the arrow keys, highlight BROWSE on the menu bar and press **ENTER**.
Using the arrow keys (←, →, ↑, ↓), select the index to browse and press **ENTER**.
Type the first few letters of the word you are searching for and the index will jump to the closest entry.
Press **ENTER** to select the term.
Press **F10** to view the brief citations.

To post results of browsing to the search workspace, place the cursor beside the desired term and press **CRTL-V**. This will allow you to combine the terms found while browsing with other sets in the Search window.

Caution: **CTRL-V** posts the term on which the cursor is placed, **not** the highlighted items.

•Changing the Format of Citations•

Go to FORMAT on the menu bar using the arrow keys (←, →, ↑, ↓).
Press **ENTER**.
Choose either STANDARD or DETAILED formats; STANDARD CUSTOM and DYNAMIC CUSTOM formats are unavailable.

STANDARD format is more compact. Fields are not labeled.

```
05 General                                          93-31658

Criteria for Choosing Energy in Urban Areas   R. Protic, Univ of Zagreb, Croatia; Nafta, Mar
93, v44, n3, p153(16) journal article
Urban energy systems must be configured to provide adequate energy supplies for all
consumer needs while satisfying various economic, technical, and environmental criteria....
(11 graphs, 14 refs, 7 tables)

1 ENERGY SUPPLY-REGION
2 URBAN PLANNING...
```

DETAILED format features labeled fields.

```
Database:           Environment
Category #:         08
Category:           International
Fiche:              •
Accession #:        93-04164
Title:              Environmentalists, NAFTA, and North American Environmental
                    Management
Author Name:        Stephen P. Mumme
Author Af:          Colorado State Univ, Ft Collins
Source Date:        Winter 93
Source Info:        v2,n1,p205(15)
Type:               journal article
Abstract:           The North Am Free Trade Agreement (NAFTA) negotiations have
                    been hotly debated by...
Features:           35 refs
Subject:            1 ENV ORGANIZATIONS
                    1 NORTH AMERICA...
```

•Summary of Commands•

F1	Help	**End**	Bottom
F3	Clear Workspace	**+**	Advances to next citation (when viewing several citations at once)
F5	Print		
F10	View Citation		
Ctrl-J	Jump to a citation	**-**	Returns to previous citation (when viewing several citations at once)
Ctrl-X	Extended select		
Ctrl-D	Extended delete		
Esc	Closes window and cancels search	**PgDn**	Advances to previous page
		PgUp	Returns to previous page
Del	Deselects	**$ or ***	Truncation
Home	Top	**?**	Truncates to a single character

Appendix 4: Sample Web Pages

A Model Scholar's Outpost on the Electronic Frontier

Project supported in part by the U.S. Department of Education and the John C. Hodges Library at The University of Tennessee, Knoxville

University staff and students reading this for the first time will want to review the Workstation Policies. If you need to contact someone working on the project, consult the list of Workstation Personnel.

An Electronic Branch Library

The Model Scholar's Workstation on the Electronic Frontier offers access to library resources and services at a site convenient to faculty, researchers and students. Funded in part by the U.S. Department of Education, the study will test the usefulness of an electronic branch library for faculty and students.

Environmental Science Emphasis

Four sites on and near campus are test areas. The Energy, Environment and Resources Center(EERC), Environmental Engineering, and the College of Communications on campus, with the Center for Environmental Biotechnology(CEB) on Pellissippi Parkway each cover environmental issues.

The College of Communications, through the School of Journalism, offers an emphasis in science communication. Environmental reporting and six other graduate and undergraduate courses provide expanding training in the coverage of environmental issues.

The Energy, Environment and Resources Center (EERC) conducts interdisciplinary research in pollution prevention, waste management, policy, and information systems technology. EERC examines and resolves critical issues concerning energy, environment, and technology, through cooperative work with other campus units.

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The College of Engineering Environmental Engineering program spans air quality, environmental restoration, groundwater management, solid and hazardous wastes, municipal and industrial treatment operations, and water resources. Twelve faculty and more than 100 graduate students work in the group, located in Farris Hall.

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Students and faculty will also have access to the international network community through the University Libraries' World Wide Web Homepage, a network navigation tool that connects to universities, governments and businesses around the world.

User requests for materials the library does not own will be submitted by means of an electronic request form and requested materials will be delivered to the site.

The library will also offer specialized services to the sites, such as mediated searches of commercial databases, commercial document delivery, current awareness, and links to reference librarians for help in resolving complex information needs.

All stations will be linked to a CD-ROM server in the Hodges Library through the campus network. Other means of providing quick and effective service will be tailored to each site.

Equipment

IBM Value Point 486-66DX2 machines with 17-inch color monitors and Ethernet cards will provide rapid access to each of the resources offered.

Software

The following is a list of software available on this workstation.

Usenet News Reader: Trumpet for Windows from Peter Tattam
available at: ftp.utas.edu.au
directory: /pc/trumpet/wintrump
file: wtwsk10a.zip

Note: This News Reader has served well, but we are also looking at WinVN as a possiblility. This reader will Uuencode and decode on the fly. It is available at titan.ksc.nasa.gov, directory/pub/win3/winvn, file name winvn_92_6.zip.

Gopher: HGopher, a Window-based gopher

available: lister.cc.ic.ac.uk
directory: pub/wingopher
file: hgopher2.3.zip (Winsock version)

Note: We have been using version 2.4, but it is no longer available through the FTP server because it has been purchased by FTP Inc. Version 2.3 is still available but no longer supported. However, another gopher, WSgopher is available for public access from UTK library home page. Its url is http://www.lib.utk.edu:70/5/PCarchive/IBMtype/WSgopher/wsgopher.exe

WWW Browser:
Netscape Navigator
available at: ftp.mcom.com
directory: /

Mosaic for Windows
availble at: ftp.NCSA.uiuc.edu
directory: /Web/Mosaic/Windows

FTP: WS_FTP client
available at: 129.29.64.246
dirrectory: /pub/msdos
file: ws_ftp.zip

Note: There is also a 32-bit version at the same site, but it doesn't seem to make much difference in the way it runs.

Audience

At the EERC and CEB, all researchers and staff will be eligible. At Environmental Engineering, faculty, graduate students and undergraduate students may use the workstation. At the College of Communications, priority will be given to faculty and graduate students in the School of Journalism. Undergraduates in Journalism involved in environmental reporting and in environmental policy may also participate.

Links to Library Experts

A graduate student will be assigned to each site up to 15 hours per week to provide help and training. A project librarian will also tour all sites regularly and serve as a telephone contact for questions and problems.

Documentation is located at each site for most of the resources offered on the workstation. Training is available both in group and individual formats through the course of the project.

One goal of the project is to encourage all participants to take advantage of the computer facilities available to them for communication and research. Accounts for the UNIX and CMS systems may be obtained through the UT Computing Center.

For more information, contact:

Melinda Brown - Electronic Services Librarian
135F Hodges Library
423-974-3652
brown@aztec.lib.utk.edu

Developed at the University of Tennessee, Knoxville

Gayle Baker - Project Coordinator
423-974-3519
baker@aztec.lib.utk.edu

Project Librarians
Jeff Heck - October 1993 - July 1995
Alan Goslen - August - November 1995

Project Team:

Flora Cobb
Martin Courtois
Angie Leclercq
Tamara Miller
Linda Phillips - Director
Richard Pollard
Jane Row

Appendix 5: Slides from ALA Presentation

A Model Scholar's Outpost on the Electronic Frontier - Initial Statistical Evaluation

Forum for Science and Technology Library Research

Jeff Heck and Gayle Baker
University of Tennessee

June 25th, 1995

This presentation will be available
for FTP/viewing
through our home page at:

http://scholar.lib.utk.edu/sws/

as of June 27th

Scholar's Workstation Project

- U.S. Dept. of Education Title HEA - IIA funding with about 1/3 UTK Libraries matching funds
- Oct. 1, 1993 - Sept. 31, 1994 Extended to Sept 31, 1995

Purpose of the Project

To provide convenient, timely access to electronic information in or near the scholar's workplace, particularly in relation to environmental studies, a common focus of the sites selected for the grant.

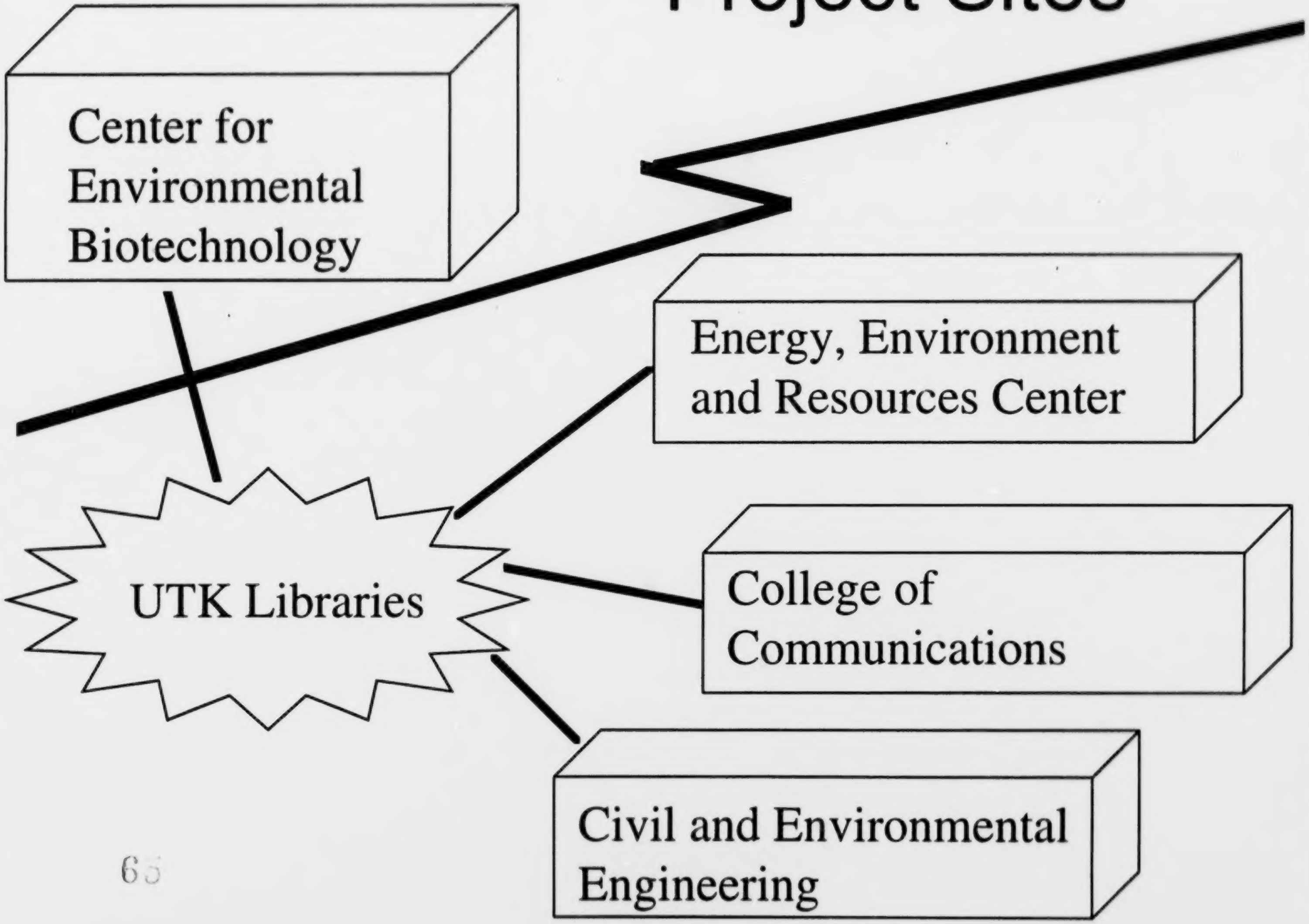
To demonstrate and assist in the use of current and emerging information technologies available through the UTK Libraries and the campus network.

To evaluate the results.

Scholar's Workstation Project Methodology

- Place four workstations on campus
- Set access to CD-ROM, Internet, etc.
- Provide graduate students from the School of Information Sciences 15hrs/wk for assistance and links to Reference personnel
- Teach medium and small-group classes
- Gather statistics through surveys

Project Sites



Center for Environmental Biotechnology

UTK Libraries

Energy, Environment and Resources Center

College of Communications

Civil and Environmental Engineering

Methods of Statistics Gathering:

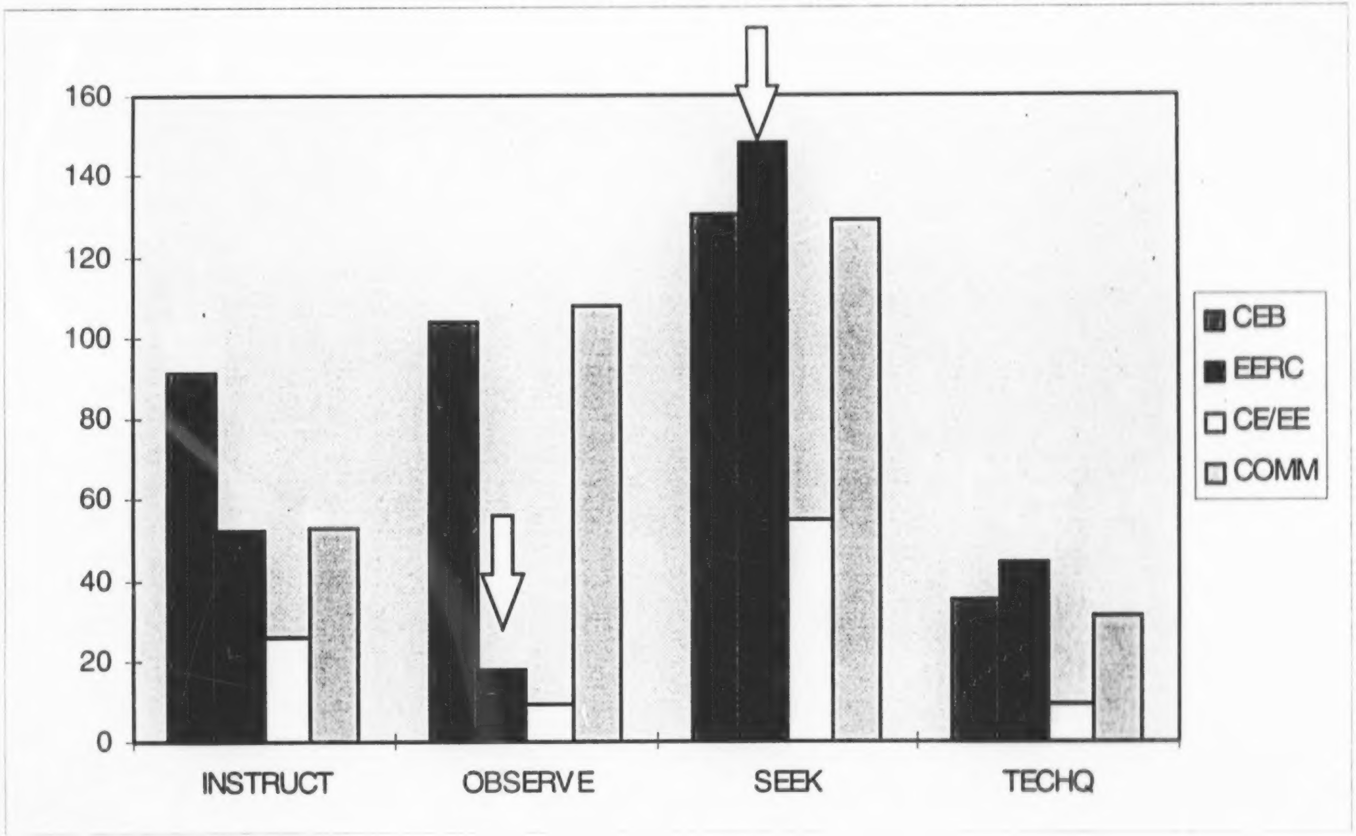
1. Team members submitted diary entries each shift by e-mail. Activities in the entries were categorized and counted.

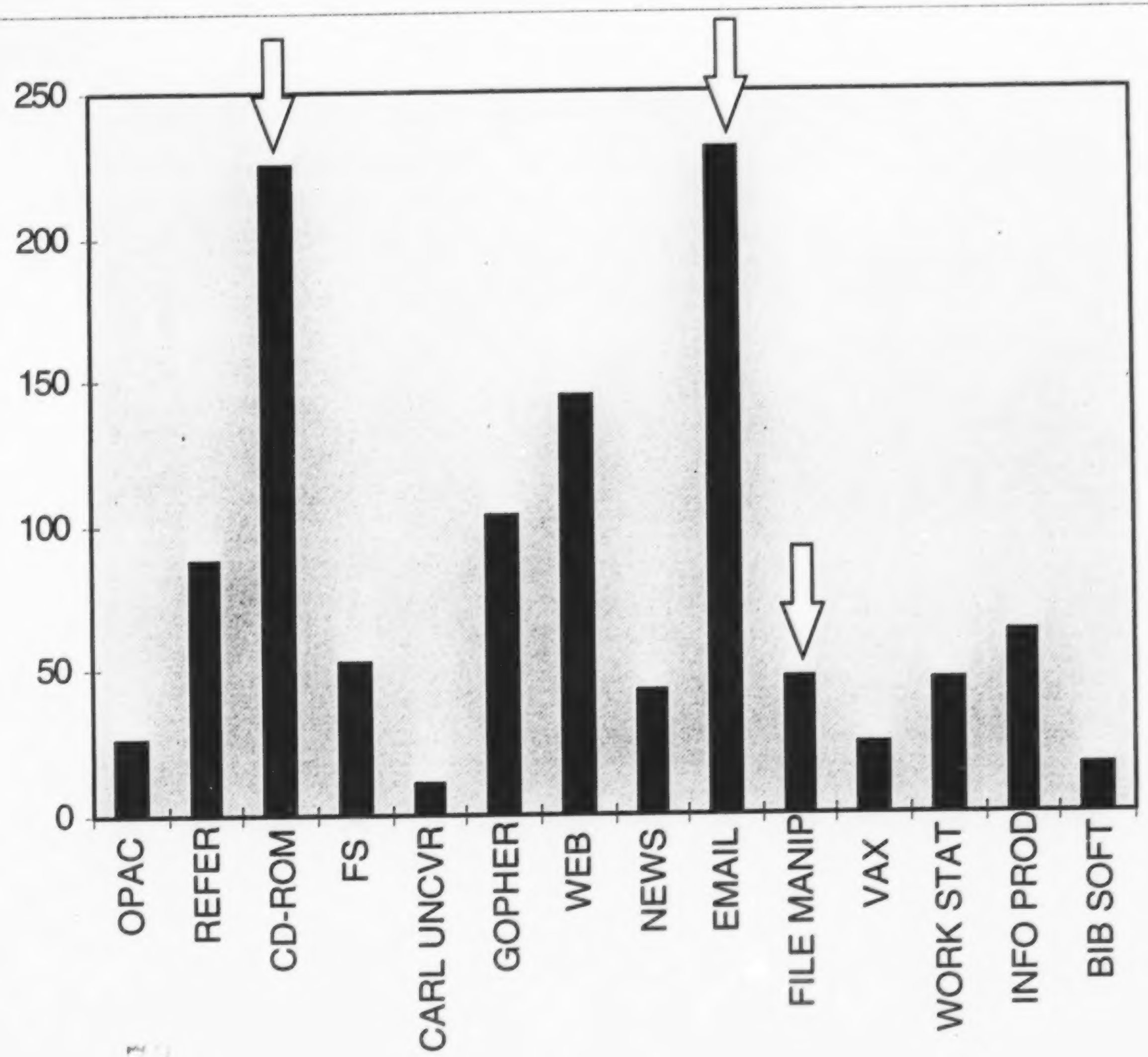
2. Software on each workstation allowed counts of each CD-ROM product used.

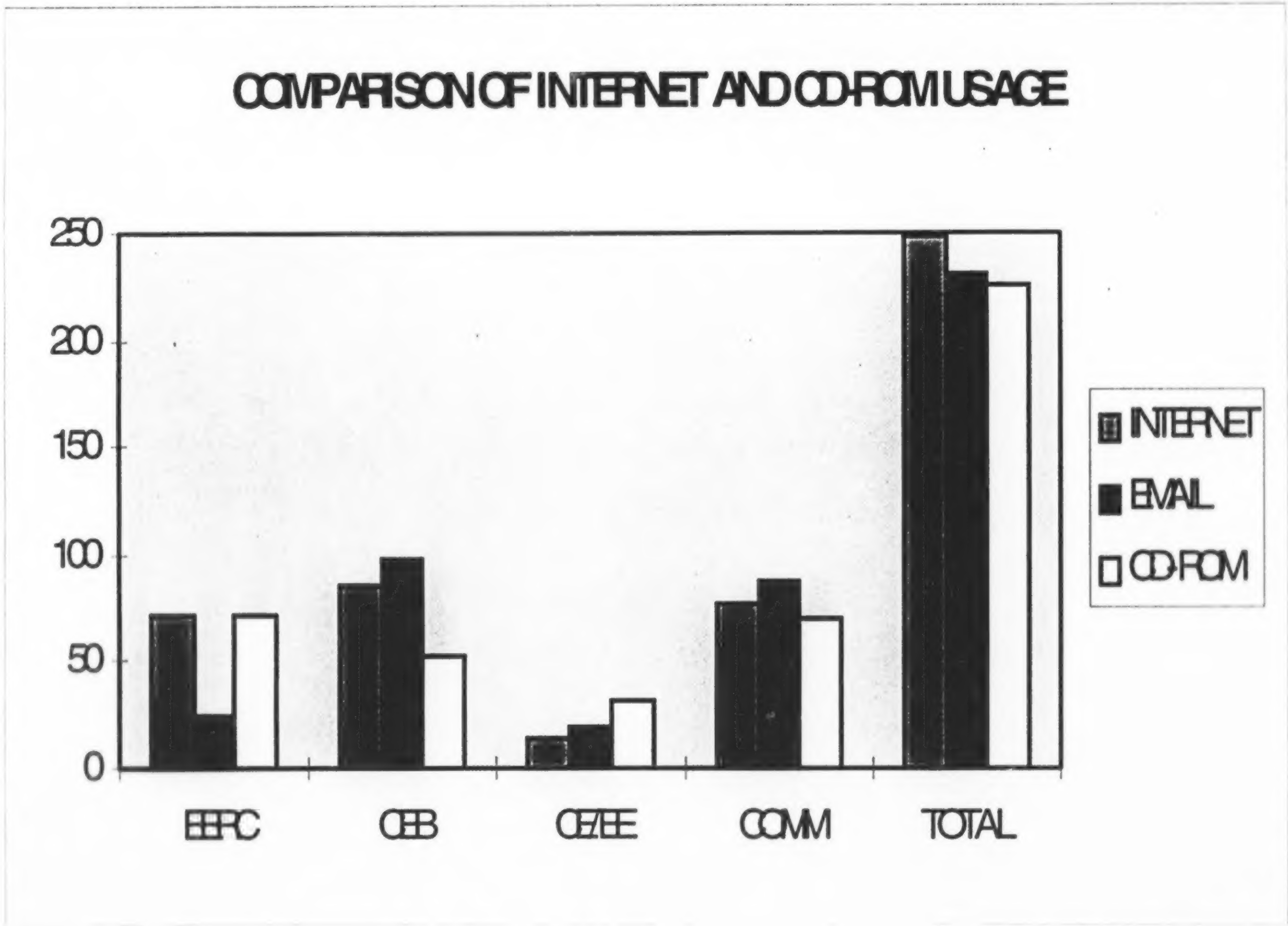
3. Log files on our web server, scholar.lib.utk.edu, allowed counts of file accesses.

4. Surveys administered during the project gathered pre- and post-test data.

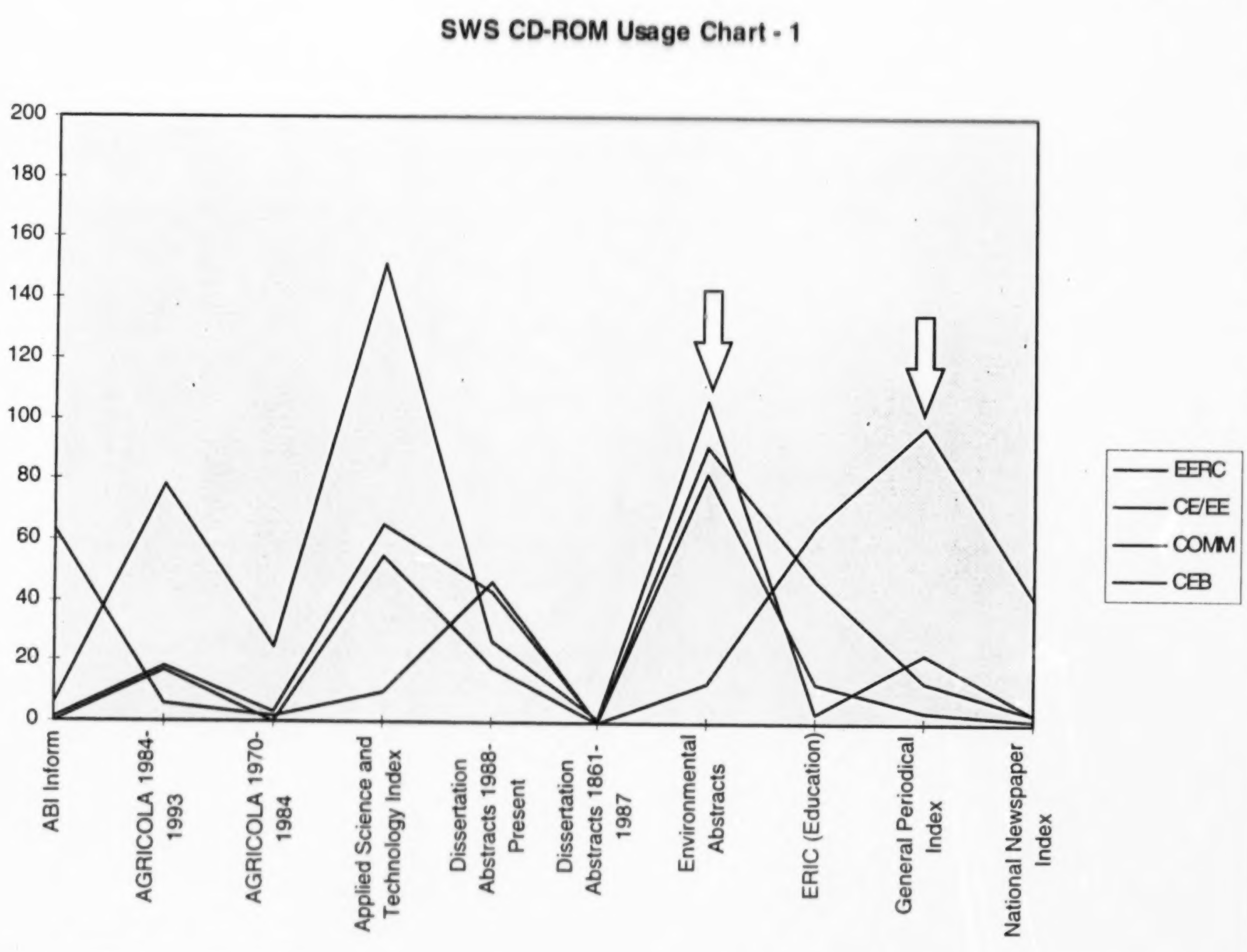
Select Statistics from Diary Entries


160
140
120
100
80
60
40
20
0
INSTRUCT
OBSERVE
SEEK
TECHQ
CEB
EERC
CE/EE
COMM

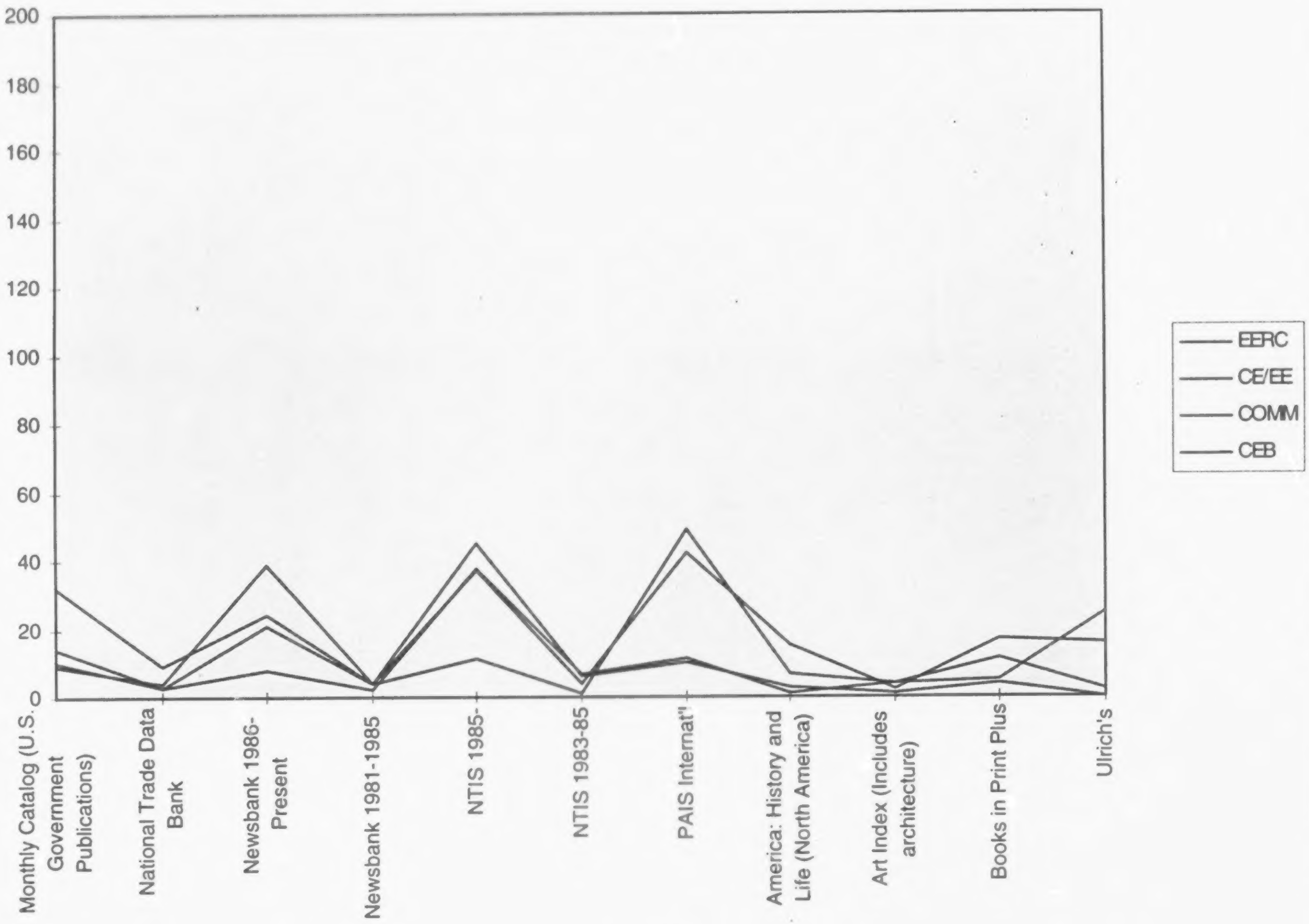

250
200
150
100
50
0
OPAC
REFER
CD-ROM
FS
CARL UNCVR
GOPHER
WEB
NEWS
EMAIL
FILE MANIP
VAX
WORK STAT
INFO PROD
BIB SOFT


COMPARISON OF INTERNET AND CD-ROM USAGE
250
200
150
100
50
0
EERC
CEB
CE/EE
COMM
TOTAL
INTERNET
EMAIL
CD-ROM

CD-ROM Accesses by Site
6/94 - 5/95

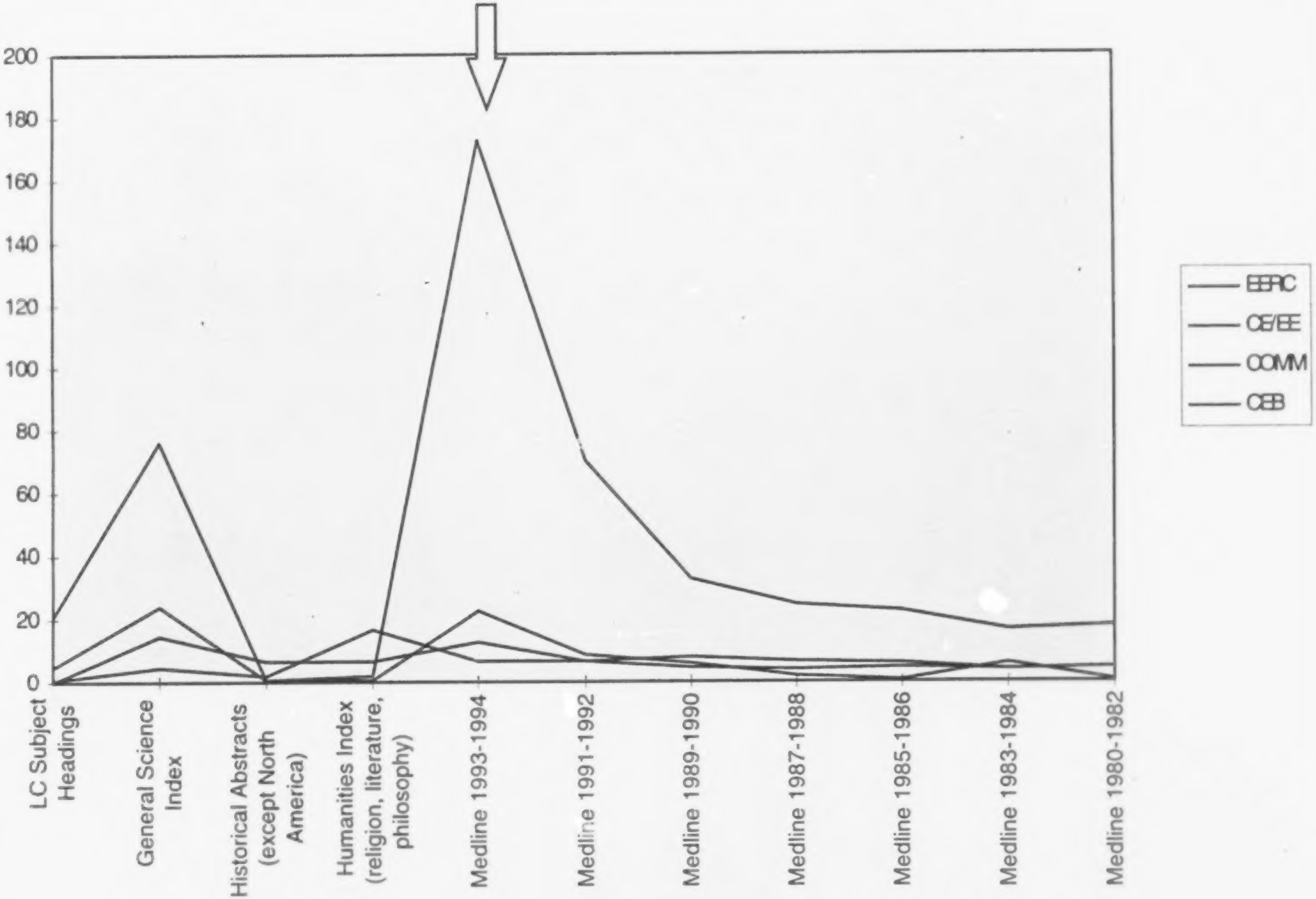


BEST COPY AVAILABLE

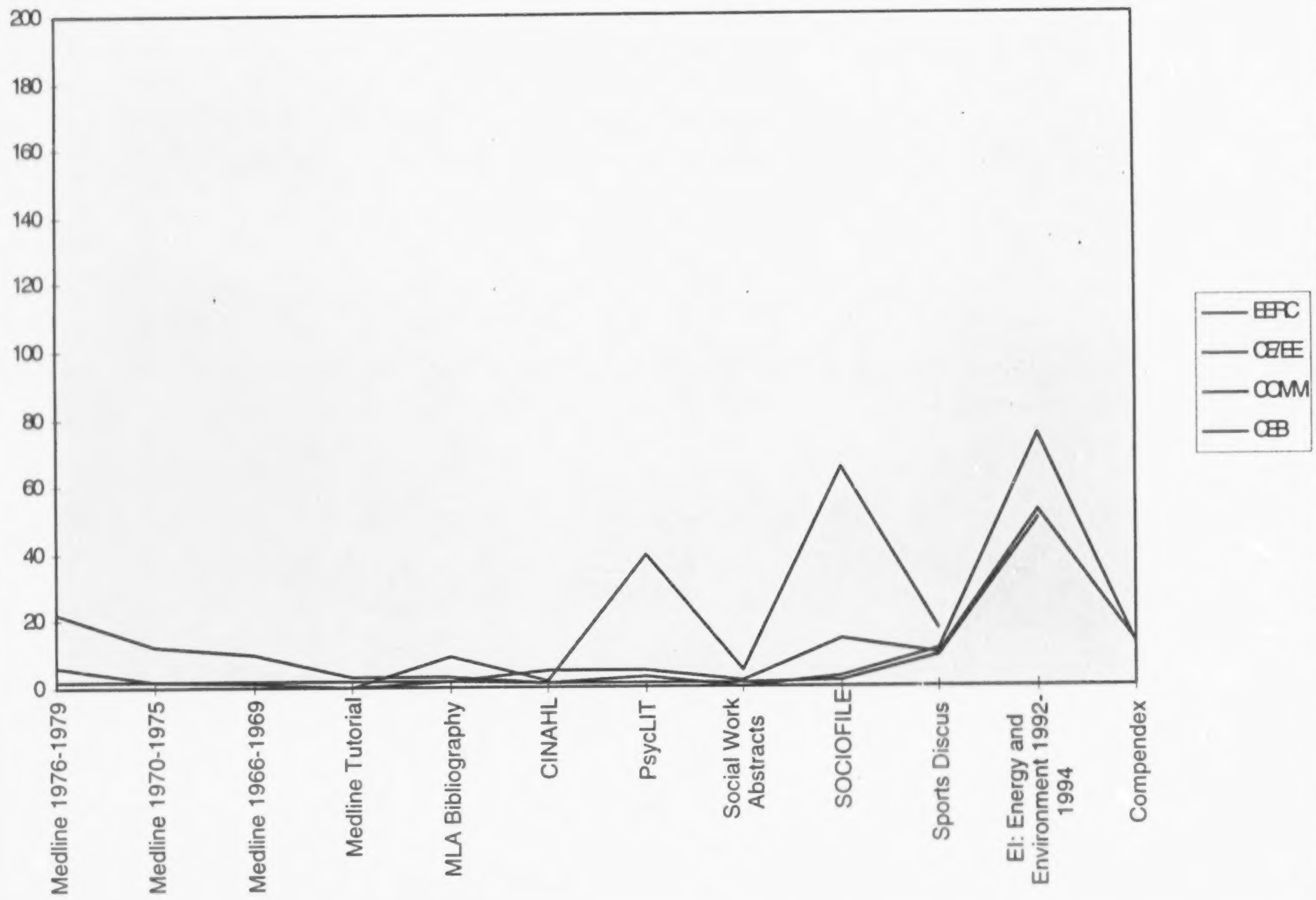


SWS CD-ROM Usage Chart - 2

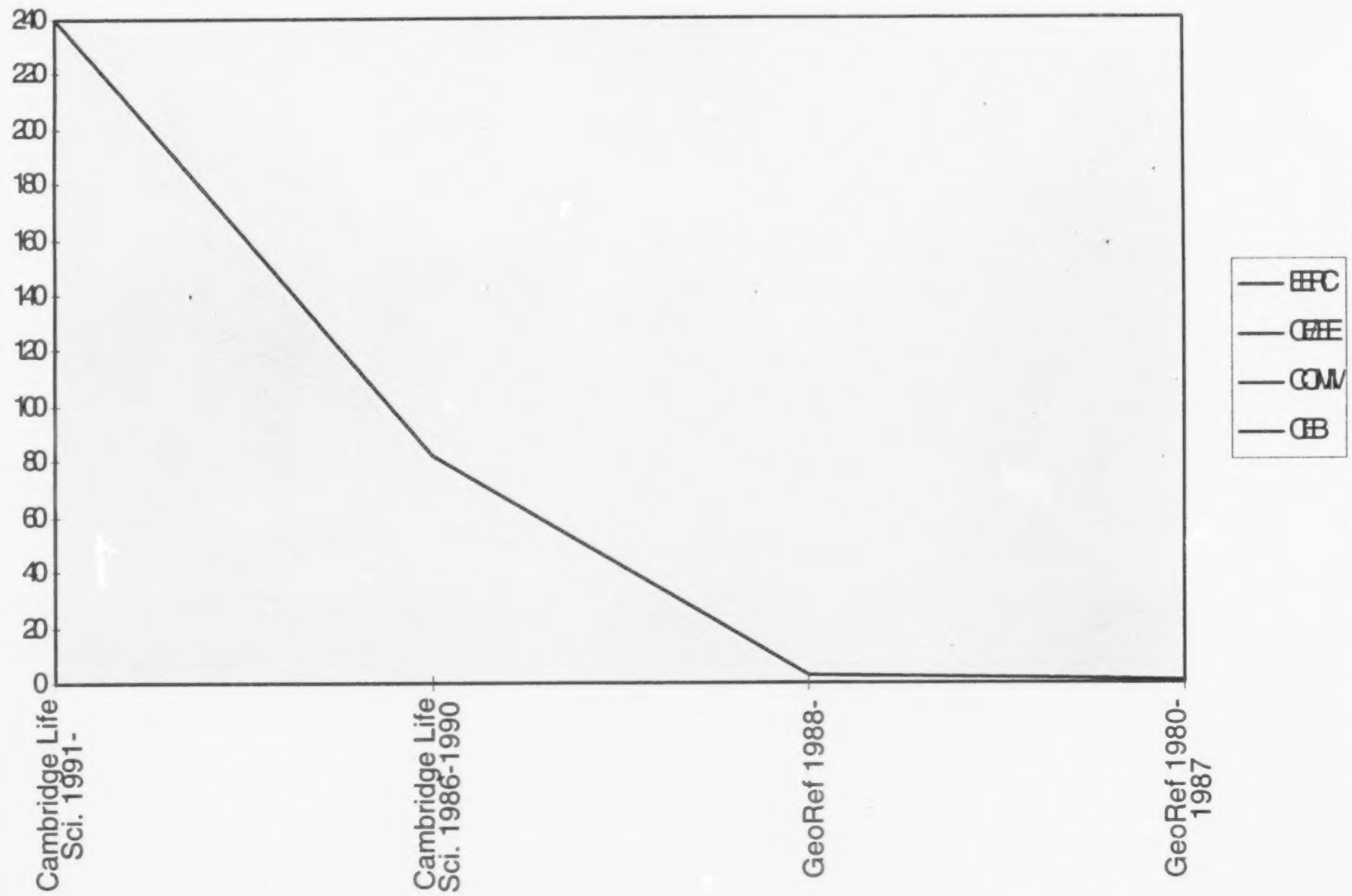
SWS CD-ROM Usage Chart - 3



SWS CD-ROM Usage Chart 4



SWS CD-ROM Usage Chart - 5



Scholar.lib.utk.edu IP accesses by directory, 12/94 - 5/95

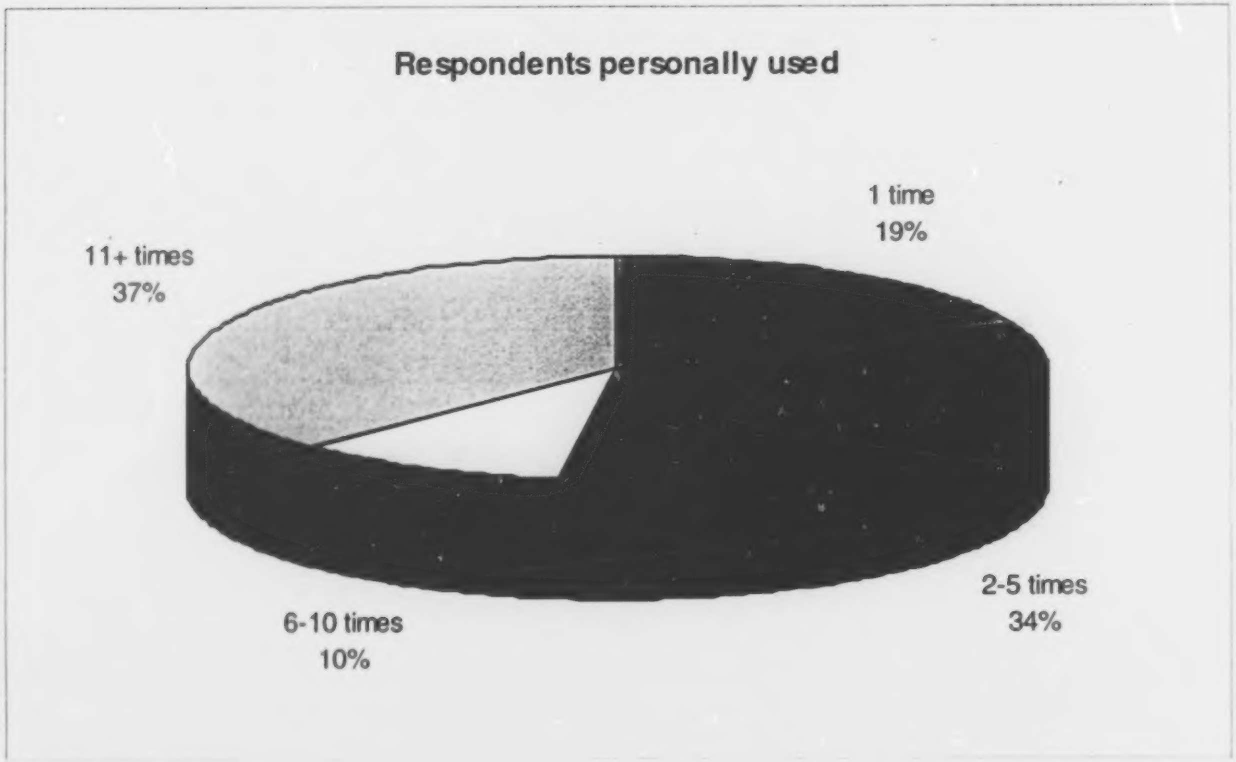
Number of /sws/ directory html page accesses:
13,586

Number of /sws/ accesses from outside the university:
8,984

Number of /sws/forum directory html page accesses:
6,534

Number of /sws/insites directory html page accesses
2,402

Pre- and Post-Test Survey Data
2/94 - 5/95



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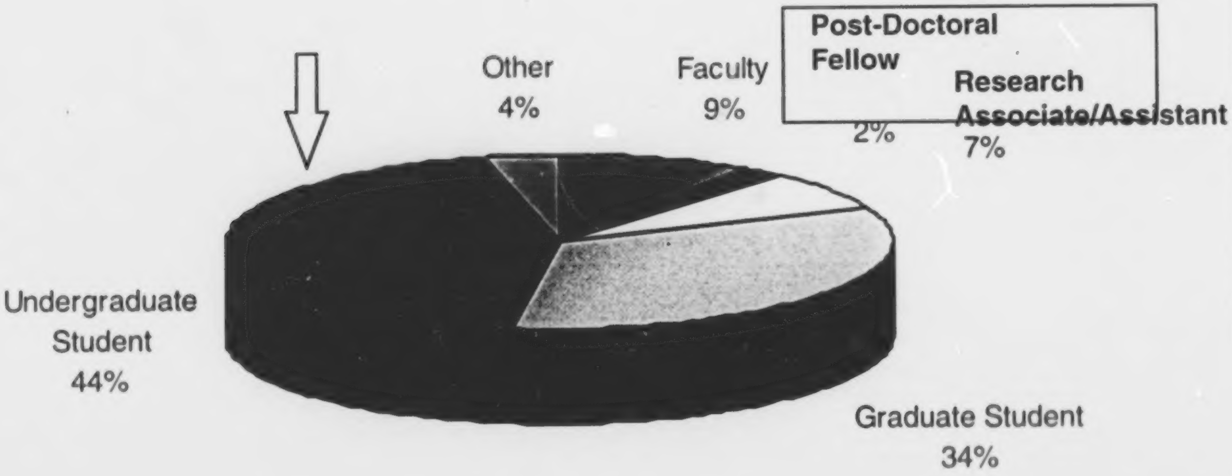
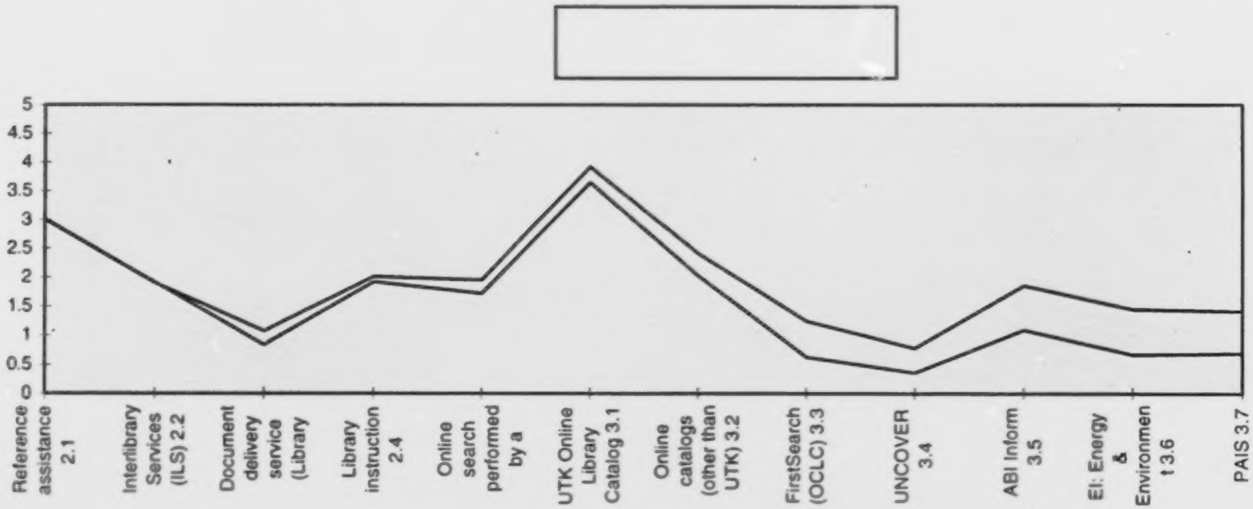
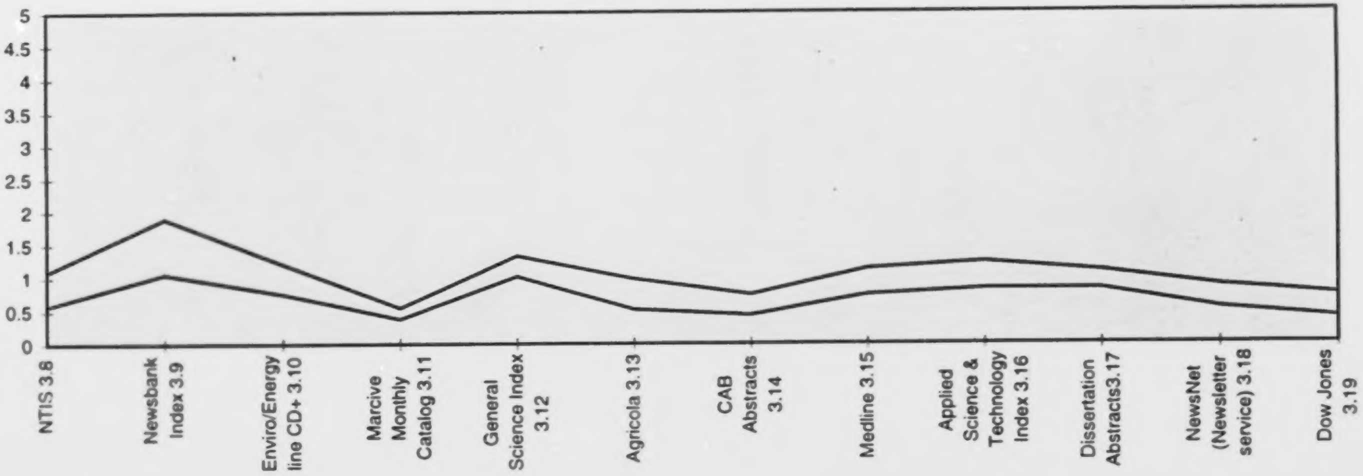
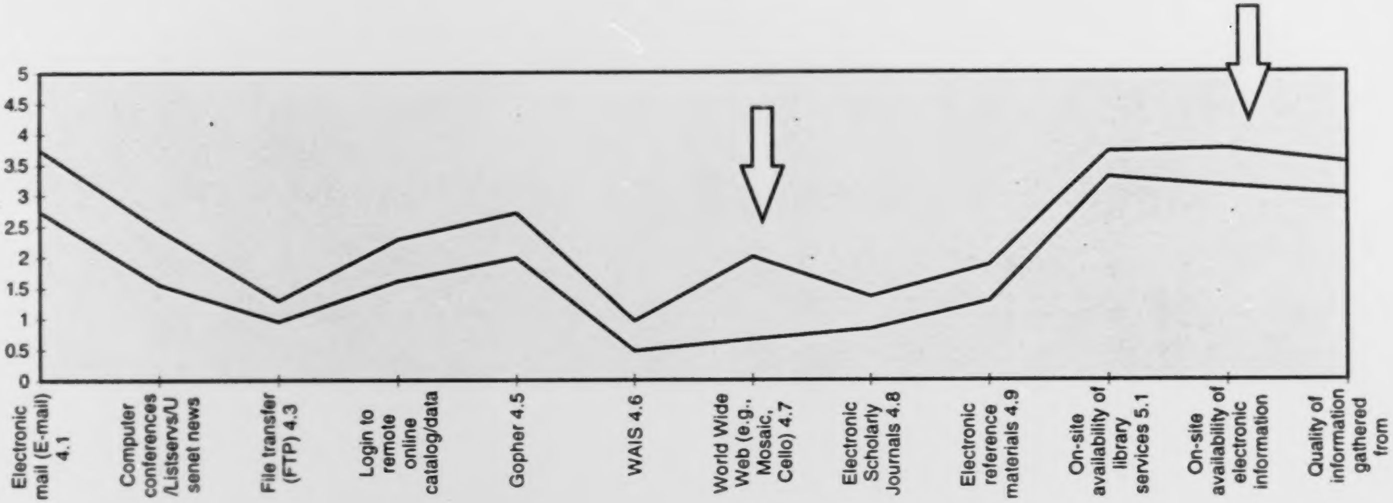
Academic Status

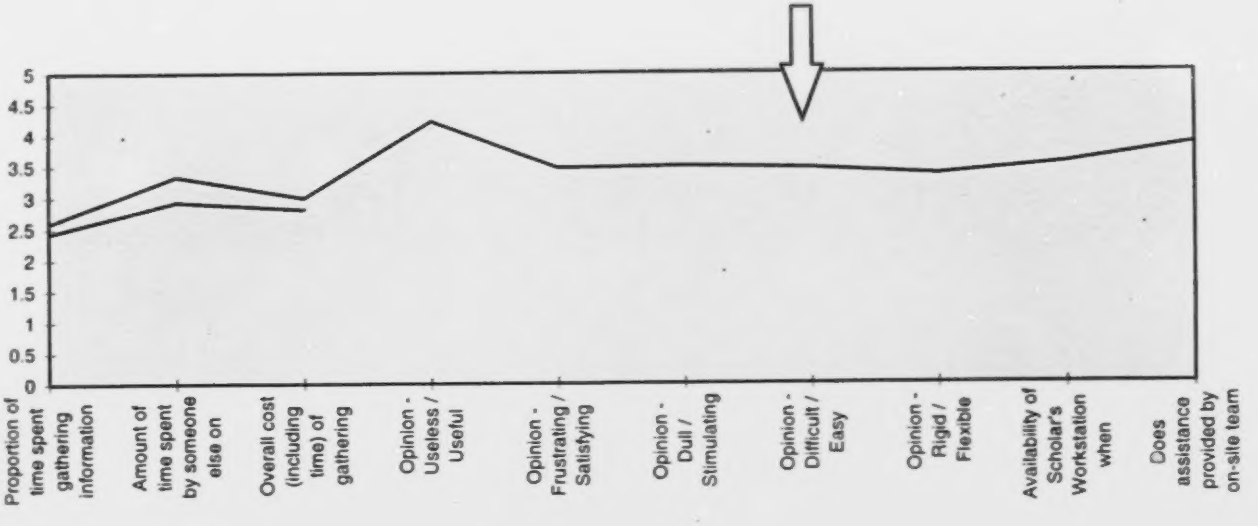


Comparison of Pre- and Post-Test Results




5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
NTIS 3.8
Newsbank Index 3.9
Enviro/Energy line CD+ 3.10
Marcive Monthly Catalog 3.11
General Science Index 3.12
Agricola 3.13
CAB Abstracts 3.14
Medline 3.15
Applied Science & Technology Index 3.16
Dissertation Abstracts3.17
NewsNet (Newsletter service) 3.18
Dow Jones 3.19


5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Electronic mail (E-mail) 4.1
Computer conferences /Listservs/U senet news
File transfer (FTP) 4.3
Login to remote online catalog/data
Gopher 4.5
WAIS 4.6
World Wide Web (e.g., Mosaic, Cello) 4.7
Electronic Scholarly Journals 4.8
Electronic reference materials 4.9
On-site availability of library services 5.1
On-site availability of electronic information
Quality of information gathered from


5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Proportion of time spent gathering information
Amount of time spent by someone else on
Overall cost (including time) of gathering
Opinion - Useless / Useful
Opinion - Frustrating / Satisfying
Opinion - Dull / Stimulating
Opinion - Difficult / Easy
Opinion - Rigid / Flexible
Availability of Scholar's Workstation when
Does assistance provided by on-site team

Data Significance

Practical Significance

We used Practical Significance at this stage, prior to calculating Statistical Significance.

A 0.8 or greater point increase in the 1 to 5 scale was noticed in three categories:

E-mail
World Wide Web
UseNet groups

A 1.3 or greater point increase in the 1 to 5 scale was noticed in only one category:

World Wide Web

Determination of Practical Significance

Two items intended for use during the project were NewsNet and DowJones. Though we ultimately did not offer these services, they appeared on the pre and post test surveys. Mean use levels of these services began at 0.53 and 0.39 respectively and increased by 0.33 and 0.34 respectively in the post mean.

Since services we didn't offer increased in use 0.3 points, we chose to add 0.3 to our practical significance level as a counteraction.

So, where 0.5 to 1.0 might be a usual range to determine practical significance in mean changes, we used 0.8 to 1.3 as a range.

Observations and Conclusions

Observations

We note that the increases in World Wide Web and E-mail use may have been influenced by the exponential increase in coverage in subject areas by the popular media.

We also note that some increase in use of CD-ROM products may have resulted from announcements of these products through campus publications and the UTK Librarian, our library newsletter.

Some local increase in use of all products may have resulted from increased awareness of local LANs and Internet tools on the part of administrators and faculty.

We assume N is sufficiently large for testing.

Post test results include 22.5 percent of respondents who never used the workstation, yet answered all questions in the survey.

Given the small population and diversity of the four audiences (sites), standard deviation between 1 and 2 is not surprising. (Which is where all but two responses fell.)

Some respondents completed two instances of the post-test. Only the most recent answer for each response was used for this cut.

Enthusiasm of Project Librarian led to inclusion of many Journalism classes not anticipated in the project design. Inclusion of this large number of undergraduates in the survey process strongly affected results.

Because there were no mailboxes for the undergraduates, pre- and post surveys for them were distributed through their classroom setting. This likely negatively affected the overall survey results.

Although all but one of the Onsite Team Members hired for this work were close to completing their School of Information Sciences degree, we found it was not a crucial difference at this level. Our non-SIS employee earned the name “magic woman”for her persistence and skill in locating citations for the Journalism faculty.

Next steps:

* Perform a normality check. (The data may be skewed.)
* Test Statistical Significance.
* Extract Non-users from post test group and re-examine results.
* Extract Pre-testers who later filled out a post test and examine the correlation.
* Locate and perform a non-parametric test for different population sizes.
* Determine if the usage of the Internet tools and CD-ROM products was transferred to the workstation, as opposed to use in the library.
* Break out results by site and by academic status.

Conclusions:

Current survey data do not acurately reflect the value of the project; future breakouts of data by site and by academic status should reveal higher scores for most sites and services. It should be noted that despite the seemingly small change in use of services, overall ratings of the value of the project and onsite personnel were high.

Low use at the Civil and Environmental Engineering site resulted from a number of factors: only one class in the program made use of bibliographic citation databases; at the start of the project little material on the Internet was of use to Environmental engineers; few of the faculty had access to e-mail. I was unable to locate a hook to pull the faculty and students into the services offered. Services offered were perceived to have little value.

Technical questions concerning computers external to the project required a significant investment of time but provided opportunities.

Provision of only one workstation works best at research labs. Availability may be a problem at sites where larger populations of undergraduates and non-traditional students require access.

The validity of our survey data may be questionable. CD-ROMs accessed at medium rates according to access figures are not so ranked in survey results. Also, our survey return rate of 35 percent produced a small N.

Anecdotal and survey observations suggest a greater value to the workstation for graduate students than for undergraduates at our sites. Most faculty used access at their own desktop or asked research assistants to perform the searching. Self-sufficiency in searching, therefore, was most often observed among the graduate students.

Provision of web server access may be of value to sites as they begin providing online information, especially for research centers that regularly publish research and newsletters.

Remote site introductions to library resources provide a valuable opportunity to educate users about additional library services, such as document delivery.

Links to Reference experts were used infrequently. in part because the project team members in and out of the library were able to provide reference room assistance. Most referrals were for online searching.

Recommendations for establishing remote sites:

Choose a location available most hours to the local users.
* Comm. site open only to 5 p.m.

Prepare a strong list of Internet and CD-ROM resources that will help users at the site before launch.

Involve Reference faculty in initial meetings to introduce the services at the sites.

Request a time committment at the sites on the part of the Reference librarians.

Have team members on sit away from directly in front of the workstation. Users assume it's in use.

End

Appendix 6: Excerpts from Scholar's Workstation Diaries

Excerpts from Scholar's Workstation Diary Entries

Center for Environmental Biotechnology

August 3, 1994:
I showed User the techniques Marty showed me on Monday for narrowing his search of MEDLINE. User was most appreciative. I also demonstrated use of the CD-ROMs for User.

October 5, 1994:
This has been a busy day. Two users checked e-mail. I demonstrated the Workstation to User, who works at a university lab in Germany.
I showed Research Tools to User. He was impressed by the number of tools available.
I helped User use Pine. One thing he wanted to do was add the > marks when he replied to messages. Pine does this automatically when it replies.
I helped User contact the help desk to locate a manual for Vax Basic. He wants to write a program in Basic or C++. I asked the help desk if they could get us a manual or if he could purchase one at the bookstore. Per the Vax guide they have the manuals at some of the remote sites. I also asked if they could add C++ to the Vax. It is on the Unix. Since User seems to know Vax Basic, I will e-mail User to talk to him.

October 27, 1995:
When I arrived User was running a gene mapping program through MOSAIC at GenBank. He was using version 20a6 to cut and paste sequences from Entrez to the form based search engine at GenBank. When he tried to save it to disk (load to disk) it would not save. I examined it and then asked Alice Layton what we were doing wrong. It turns out you have to turn on the Load to Disk option prior to sending the search.
I showed User how to search EPA documents and technical manuals using MARCIVE and NTIS CD-ROMs. He was happy with it though he wanted to get the actual documents from an electronic database.
I have forgotten how you can tell which items are available or likely to be available in the library. Per the guides in the notebook, it appears that most (87%) of MARCIVE is available and only certain agency items from NTIS are available in the library.
Two researchers used the workstation to review and send e-mail.

November 16, 1995:
When I arrived User was reading his e-mail. I helped another User locate the WWW server for the Protein Data Base (PDB) at Brookhaven National Labs. It was in Pedro's Tools which has been slightly reorganized. Each of the sections is now on a separate page. I like it. Unfortunately for user, PDB did not have the enzyme he was searching for.
User used Mosaic to look at some new sites and some of the job searching sites on the Web.
Only one interesting / useful new gopher on Washington and Lee's list: Trumpet Software Distribution site at http://gopher.trumpet.com.au
User asked for help in locating a CD-ROM or on-line database covering geochemical journals to search for recent articles on desert varnish, the organic coatings on rocks in the desert. I sent a separate detailed request for help to Flora.
I also spent some time adding environmental WWW servers to my Mosaic Hotlist. Thanks to Jeff's advice I discovered that the problem loading the one URL yesterday was due to the placement of a nonsupported symbol to bracket the title of the URL. Once I removed the symbols, the URL loaded.

Energy, Environment, and Resource Center

March 8, 1994:
Busy morning highlighted by a discussion with three of the FORUM staff about how the workstation could make their life easier. They were primarily interested in 1. News abstracts, 2. Electronic newsletters on topics of concern to EERC, 3. the possibility of mounting the FORUM summaries on the internet as a searchable database.
I located several newsservices that might be of interest to them. I am going to put a megaedit file in their folder that details how to locate each of these locations.
I referred them to the UTCC to see how one goes about mounting a gopher server on a PC and whether or not it is possible here at EERC.

June 3, 1994:
I helped a new assistant search for books or articles published by an author whose 1992 dissertation appeared of interest to her projects. We discovered that the dissertation itself was available from UMI and NTIS. I referred her to ILS to determine what would be the most cost effective way to obtain a copy of it.
I talked to User at some length about putting full-text articles on the gopher. She has been asked to submit an article for a conference she is attending in October for the specific purpose of it being mounted on the Net somewhere. I proposed several things she should insist on from the conference organizers before submitting work that cannot be copyrighted, or at least protected from unauthorized use.
I think there is a growing interest at EERC about publishing an electronic journal of some sort. J. is in the forefront of this movement, and I am trying to support his efforts when I can. User has asked to speak to me about starting a listserv on the issue of radioactive scrap metal. We will meet next week.
Yesterday afternoon I participated in a short meeting held by a number of graduate assistants assigned with coming up with ideas to publicize the FORUM. I suggested several possible uses of the Internet, or computer-related devices that they had not thought of. Afterwards, I demonstrated Mosaic to them. They were extremely thankful that I had inserted myself into their meeting. Chalk up another one to "information professional at work."

June 23, 1994:
People are routinely using the workstation to search without any assistance. I am slowly giving folks who are interested little tutorials on MOSAIC. I have compiled a large number of electronic journals on the WEB to show to D. next week.
I was able to get some tricky information about holograms from the National Geographic Museum in Washington, D.C. by telephone yesterday. Catherine has asked to do a search on funding information for a new water resources project to begin in September. She has a list of organizations she wants to consult.
J. asked to see how to look up a Federal Register listing. D. has been sending folks over to check citations.
I have been a silent guest at interviews that the Center for Clean Technologies have been conducting for a position they have available. During intermissions I would introduce myself and tell them a little bit about the workstation project. It was interesting to test their level of interest and expertise in the internet informally. I also noticed that the EERC folks always spoke highly about how wonderful it was to have the workstation here.

June 27, 1994:
Slow day at EERC because of conferences happening all over the place and most people are gone. User came in to ask for the current status of two bills in Congress. Legislate gave her exactly what she wanted. User sent an older woman to look up information on high definition television. We used Veronica and pulled up a current paper that gave a short summary of its development in Japan and included several references. She was overjoyed. I also showed her how the newsreader and pine worked. He then sent someone else over to see if I could get a map of San Juan Utah to use in a Forum article. I went to the UT Map Library and scanned the U.S. Survey map of that region at the archives scanner next door.

I answered a number of simple questions from J. and J. I received material today from a company in Cincinnati that does "Just-in-time-knowledge" systems which are intense on-line training informatics. It has a lot of interesting parallels to what we are doing with our HTMLs.

June 29, 1994:
I had a request to locate a citation for a book published by the Congressional Quarterly which is held by Hodges Library. They wanted to know a price, but none of the bibliographic data made reference to a price. I called Aquisitions, and even their records mentioned no rice. (Makes me wonder if it was free.) I asked them to check the vendor's name so that I could call them directly and get a price - but I haven't heard back from them yet.
User brought a newspaper clipping in that made reference to a Congressional Budget Office study about site cleanup at nuclear power plants and asked if we could find the title of the study. This was at 5:15, and I was just leaving, so I took the info and promised to get back to him if I could locate the info and how I did it.
I demonstrated Mosaic to D. and B. and talked with them about establishing a Forum Homepage with links to the materials already on the gopher. They were very excited about this prospect and want to post the Tables of Contents of previous issues there as well. B. is going to prepare the InSites for the gopher soon.

July 27, 1994:
I started out the day with a new student from the Ag. campus doing research on the Big South Fork acid mine drainage. Basically she was trying to determine what mines have operated in the watershed and which ones are still there. We located the name and address of a local office for Bureau of Mines and I suggested she contact them. Also, I suggested she check with the TRI to see if mines are required to file, in which case she should be able to find out currently operating mines through that. We also did a literature search on acid drainage in general on EI, ASTI, and in the EPA on-line library. I also suggested she find out if that area was covered by TVA, in which case their library ought to have some materials on closed mines too.
User came in next asking for a major literature search of the popular press on lead poisoning. FirstSearch was so slow that I finally suggested that she could easily search InfoTrac at the library. As she was familiar with InfoTrac, she said she would do that.
A salesman gave four of us a presentation on a CD-ROM product that contains some 1400 Site Reports on all superfund sites in the country. It runs $1500 for a year's subscription with 4 updates. I asked him what their policy was about keeping the last disk even if you cancel the subscription. His answer was extremely vague, as if no one had ever asked that question before. K. decided it was worth having a 30-day free trial.
I had a question about how to download a file using ProComm from a remote database. Apparently there is a simple command that "prepares the software" for downloading. I did not know it but suggested she check the menu on the help screen. She reported later that she found it.
Someone did an extensive literature search beginning at around 2 pm and was still there when I left at 3 pm.

College of Communications

March 14, 1994:
I spent over an hour exploring Internet resources on the gopher; I looked specifically for Law/Legal-oriented sources, but found items about business and journalism as well.
Between 2:00 and 4:00 Jeff installed the PC Tools 2 on the workstation. We also made a correction on the FirstSearch Step 2 batch file. No users sought assistance during that time.
Regular onsite hours were curtailed in order to provide preparation time for presentation given to Dorothy Bowles' class from 5:45 - 7:00.

The presentation went well. The class is made up of 8 PhD students; the entire class attended. They were talkative and participated by offering search suggestions and sharing a little about their research. They requested that we stay a few extra minutes to them CARL Uncover. In addition to Uncover, we presented the standard introduction to the project, showed them CD-ROM products (ERIC and Newsbank, both at their request), toured the gopher, touched on the Newsreader, mentioned Vax access, and demonstrated FirstSearch (searching the FactFirst database). All those who attended the session filled out surveys (except one person who had attended a previous session) and received the Communications Onesheet.

In particular, the class was enthusiastic about Library Express. The man who attended the previous session commented (ecstatically) that he had learned entirely new and different things at this session and seemed enthusiastic about pursuing the resources of the workstation. Dr. Bowles seemed pleased with the session.

April 4, 1994:

User approached me with an interesting info need - he had received a letter from a former student who is nom in Holland. The student requested that User find some info for him on affirmative action in the U.S., and particularly the reaction of blacks to it. Doctor felt that the student's needs would best be served by the kinds of general articles found in InfoTrac, rather than looking in PAIS for policy info. We searched InfoTrac and located about four articles that he thought would by applicable.

Even professors need help searching, not just with the mechanics of an unfamiliar technology, but in determining what subject headings to explore and which articles seem relevant. Part of this may be due to the fact that we had different perspectives on what the question was (and I think he didn't necessarily have the corner on the market on this one because the question was not his, but someone else's - if it had been his question, I probably wouldn't have been as assertive with my input about which subject headings under Affirmative Action seemed worthwhile). I say all that to assert that information professionals have a definite edge on retrieving and sorting through data - even if we lack deep subject knowledge, we are trained to quickly grasp the pertinent issue/topic and pursue the information efficiently.

No other action onsite. I spoke with User, and she reinforced what other professors in the department have expressed about the workstation - that now that they know it's here and what it can do, they will actively incorporate it into their curriculum next year and encourage students to avail themselves of its resources. Enthusiasm abounds in the ranks of the professors and the doctoral students, but traffic at the station is slow.

I spoke with RH the other day about an ftp site for a photography project he is working on in conjunction with several other universities. I spoke with J, who suggested that I refer him to BB, which I did.

RH wants to set up an ftp site for a group of image files (from photographs taken by a class of his) to be accessed by folks at several universities who are participating in a cooperative photography project. He needs to know who to talk to about this. At first, only the people involved in the project would have access (by anonymous login); after the project is completed, he wants the world to have access for about a month or so, then the site can be disbanded. Who should I put him in contact with? Is there any chance that the workstation at Comm could be the site for this? I know that image files take up A LOT of room, but it seems like that would be a great use for our electronic outpost! I need to get back to him ASAP on this.

June 21, 1994:

A student was already searching Dissertation Abstracts when I arrived, and I was able to answer her questions about the database and help her print in long form rather than in short form (the citations appear two different ways). User stopped by when I was scheduled to work - tomorrow he wants me to help him figure out something he found in the Sociofile database. Also, I helped User do a Veronica search on SINTEF, a research and development organization in Scandinavia. That's all we found out about it; we did find some text files, but alas - they were written in Norwegian. Tomorrow we're planning to continue that search, as well as search for genome information.

July 6, 1994:
Doctor spoke with me today about lots of different things relating to the Internet. Apparently, the College of Communication is becoming increasingly interested in how they can use the Internet. He told me they are interested in creating a gopher for their school, with the usual curriculum-type information on it. Also, the Daily Beacon WWW server has interested them in other similar projects, one being to place their literary magazine, The Phoenix, on Mosaic, and include the actual poetry reading (sound file) with the text.
Doctor also had two questions:
The Daily Beacon is thinking about including electronic ads in their electronic version of the newspaper. Is there any legal problem with this idea? I told him I didn't know, but I thought the newspaper would need to get permission from the person who placed the ad before they placed it in electronic form. Does anyone else know of any legal problems this might cause?
He also asked me to find out the process of creating a gopher for the College of Communication. Obviously, they have to plan out what they want to include, but who do they contact? I imagine it's someone connected with UTCC, but I don't know who.
If anyone knows the answers to these two questions or has any suggestions or comments, please let me know.

September 8, 1994:
Examined sources for presentation to User; we have a class presentation for him on Monday 19 at 4:40 p.m. Presented material of possible interest for his class. He felt ASTI, NTIS, and Environmental Abstracts among Cds; Usenet news groups on the environment (1 or 2); and Gopher resources such as the EPA Gopher site would be helpful, so that's what we will plan to present. User will develop a list of data he would like to be able for his students to find on the Internet. David and I will see which ones the students might have luck finding. User seemed pleased with the possibilities and will hold more time open than originally mentioned.
Tried to assist one of Teacher's class members in signing into a list. System wouldn't use network software, so rebooted. Main window then reloaded as needing a password. (Apparently someone had created a password for the main window.)
I've been registering these copies of PC Tools only as needed; the benefit is that each time I register one, we have 30 free days of technical support. I registered one copy of PC Tools and called technical support. they suggested reloading two files, wncps.hep and wncps.ofc from the backup. Tried this twice without success. Tried changing the attributes for each file to allow copying of same files from my office computer. It was not allowed.
Finally I deleted the window, created a new one, and reconstituted all the icons for the services we normally offer. This worked.
I presume that part of the reason this happened is that I have become lax in changing the "rights" settings on all the windows to disallow changes.

October 19, 1994:
Loaded a copy of Netscape to the OTM for examination and comment. Loaded additional viewing updates to PC Tools File Manager viewer. Assisted User with Usenet groups, demonstrating how to forward messages to any Internet address. He had found a thread on alt.journalism about an agency he had done work with that produced a study. There seemed to be a number of flames about the conclusions and methodology of the study, and he wanted to be sure the agency had seen them.
Assisted User with printing and FTP processes between the PINE/VAX system and floppy/local printer. Encouraged her to explore the use of an FTP client on her Macintosh.
Assisted User in looking for information about the Robert Wood Johnson Foundation, which funds a "Rock the Vote" Foundation, which publishes pro-government publication about the health-care debate of the past few months. Ken wanted to learn the basis of and functions of both foundations to see if the government was sponsoring the full-color, expensive publications under the guise of a third party. Though we quickly located some references to the RWJF in the funding opportunities databases available in our SW collection, it wasn't enough to tell about the foundation. I called Reference, reached Linda, who found the foundation in a guide to same. User will follow-up in that direction.

November 9, 1994:
Worked through Emacs tutorial in preparation for work with Sun station text files and work with a personal home page in my Unix account.
Noticed new PINE version in Unix and forwarded info to OTM.
Watched and offered limited assistance to User while he downloaded search results from Sociofile.
Met and worked with graduate student in Advertising to demo several aspects of Mosaic. He was interested in mounting his own home page and in mounting the curriculum he has his students going through; he's considering applying for jobs now and would like for this info to be on-line. He had many questions and little time, so I agreed to meet him Friday to discuss further.
Worked with Doctor to find information on Stephan Kourpil, the editor of a Western Ukrainian newspaper called Visoklyzamock. I told him before beginning that paper resources would probably be best, unless he knew that they were active on the web, but he was interested in trying anyway. We found a number of Soviet Union (sic) sources, but none for the Ukraine relating to journalism. I will check further on my return to the library. Doctor said he had already called the Reference desk and been told there were no directories or info on international newspapers.

February 2, 1995:
Today was busy. People were in line when I got there. I helped three students from the risk management class with their email. I had to explain the listserv concept to them at length; two of them seemed to confuse it with USENET (understandable). They wanted to know why messages weren't available as soon as they signed up. User came by, and needed help with her email and needed to do a CD-ROM search. She needed info on public perceptions of crime and how they are influenced by the media (good topic!). She was amazed at all the stuff we were able to pull up on InfoTrac and Sociofile. That's one thing I like about working at this station - I usually need to have them explain their topics in detail.

April 3, 1995:
User dropped by wanting to know about the author Ron Rosenburm and his work. He said this author writes about six major articles for major magazines every year. Since we don't have Biography and Genealogy Master Index at our workstation, I checked at this author's name at the Library, however, didn't find any info on this author. In InfoTrac, I found two articles written by him, but that's it.
User also gave me an article from New York Times titled "Computers Keep Librarians Efficient, Lonely." (I had argued with him the day before when he was talking about this article with someone in the reading room. He just wanted me to read the article.)
A PhD student wanted to find the dissertation that has the key word "AlaR", only she wasn't sure how the word was spelled. She was told it's in one of those dissertations (UTK) that are shelved in the Communications reading room on the shelf which is right across from the scholar's workstation. She said it's a chemical used on apple to help it grow, but it may cause cancer. With this information I called Flora Cobb in reference to find out the correct spelling. Flora was helpful and let me in on detailed info. I searched the Dissertation Abstract and found six dissertations containing this keyword. But none of them were UTK Dissertations. Because it was 5 pm and the reading room was closing, I gave her Flora's phone number and location so if needed, she can talk to her.

April 5, 1995:
Searched for "Wise-Use Movement" in Environment Abstract and InfoTrac for User, a PhD student. Found about 20 articles, he said it was good enough to start with. Printed the records. Printer worked fine.
Continued with my search for anything written or about Ron Rosenbaum for Prof. Surprisingly found about 235 articles written by him in various magazines and newspapers (and info about himself); printed list of titles. Took the printouts to Prof. He was very happy. Before he came to our workstation for help, he did conduct his own searches by going to the library looking up different reference books (i.e. Journalist Biographies) and databases, but nothing came up. He thought it was strange because Rosenbaum is "such a prolific writer." I told him where and how I got the results. FirstSearch, Reader's guide to Periodical Literature in General and Reference database.

When I came back from Prof. office, a student was using Gopher Phone Book checking for email address of a professor at Univ. of Iowa. Successfully found the email address, he didn't know how to send the message to him. Since he prefers to use MAIL instead of PINE, I showed him that he had to type in%"woodwort@...." for this address. Message sent successfully.
Three students came in to check their emails.

Civil Engineering/Environmental Engineering

June 3, 1994:
Today I was able to discuss and demonstrate the Workstation with a couple of students who were in the computer lab (albeit for other reasons), and introduce them to the world of electronic resources. Both were impressed and had no idea that such resources were available to them. I also mentioned the benefits of having a personal email account. Once student was not even aware that she could have one. The other student has gone through the process of getting an account, but hasn't bothered to start it up.
I helped one of the students locate a professor's phone number, address, and email address at the University of Iowa. This was found very easily by using the "Phone Books" entry under Electronic Reference in the UT Library Gopher.
I performed a virus check on the system and also did an incremental backup.

July 14, 1994:
I had an undergraduate come to the Workstation today wanting some instruction on how to use it. I demonstrated the major services that are provided. She seems to be interested in getting primary information, full text articles, etc. She's found several items before by just browsing through the Net. I lent some structure to her search strategies and showed her some of the more popular sites and how to access them. I emphasized to her how disorganized the Internet is and how a lot of one's time is taken up just looking for the right type of information.

July 25, 1994:
Helped a patron search for research articles on the topic of pollutant transport in fractured media. We found a number of useful items in Environmental Abstracts. Energy and Environment was also useful, but the patron was not really looking for any engineering-related material. EA did turn out to be the best source.
I found on a gopher site that gives info on some links and directories that allow one to search for and retrieve software from FTP archives from around the world. There is quite a bit here and it's very diverse. I would suggest looking into it.
I ran a virus scan. Nothing detected.

September 14, 1994:
I spent much of the shift continuing to assist the student looking for information on neural networks and engineering applications. We spent time looking through INSPEC on FirstSearch as suggested by Gayle. We were able to retrieve a good deal of citations. Our only problem was not being able to print or download the citations. I tried the downloading icon that is in the FirstSearch folder, but had no luck. Is it even possible to do this on the Workstation?

September 21, 1994:
Jeff and I gave a presentation to the graduate seminar today. About fifteen people showed up to watch us talk about the workstation, in general. We didn't have a network connection so we had to rely on screen shots to provide examples. Everything went pretty well, in my opinion.
After the presentation, Jeff and I searched through ASTI for information needed by User. He is looking for citations on neural networks.
I assisted Doctor in trying to change his address as it currently appears in the PH utility. He uses UNIX, and I don't have any documentation that explains how to do this. We did try the on-line documentation

within UNIX itself, but when we tried the commands, we still couldn't get access. I told him to contact the UTCC help desk.

Some really good news for us, however, is that very shortly the computer lab will have a telephone! Having telephone access to Workstation Headquarters should certainly alleviate some problems when they arise here.

November 9, 1994:

Helped resolve a menu problem with Mosaic.

Helped resolve a problem with CAPFILE. Apparently, when user changed the files to allow BOOTP use, he changed the config.tel file in the LAN directory. I had it set to save files to C:\capfile.txt, so they could be transferred to a floppy. The altered file sent all screen scrolls to lpt1, which means they were printing to the local printer.

I added a line to change it back; I hope this doesn't mess up their configuration. So far as I could tell, their use was to allow the printing of files from UTKVM1.

February 6, 1995:

The EE lab is a busy place, but interest in the workstation is still limited. I've offered to help a few people with their email, but they declined. I left the site early today and have been working on a draft for the net class flier. Hopefully that will encourage interest.

Appendix 7: Scholar's Workstation Survey Results

Scholar's Workstation Survey Results

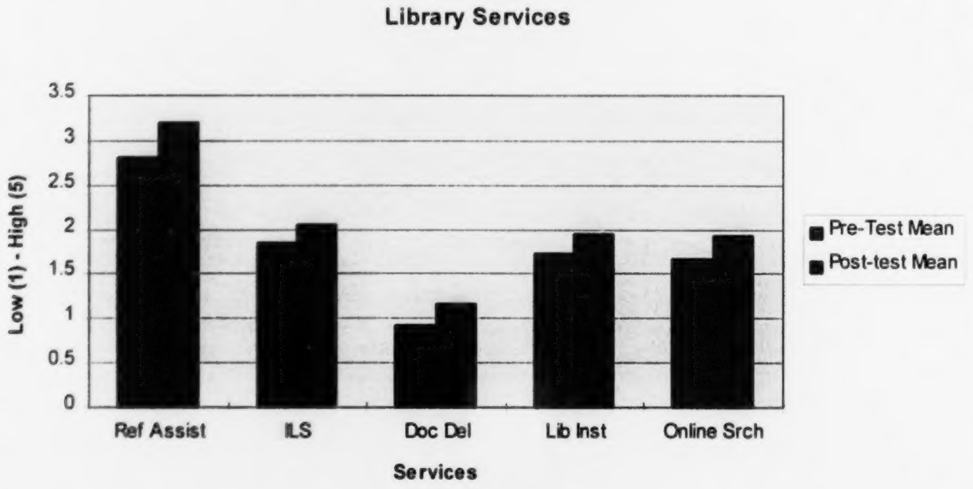
Alan H. Goslen
Instructor - Reference Librarian
Hodges Library, University of Tennessee, Knoxville

Methodology.

Surveys were used to measure library resource use and the usefulness of the Scholar's Workstation. Users were provided pre-use surveys and post-use surveys were delivered at the end of the same semester for students and at the end of the year for faculty, post-doctoral researchers and research associates/assistants. Some respondents completed two instances of the post-use survey. Only the most recent answer was used for this final analysis. To insure a direct correlation of results, only those responses from users who completed a pre- and post-use survey were included in the final analysis. Survey responses from personnel who did not use the workstation and those from whom a matching pre- or post-use survey were not available were excluded. Survey results were examined in total and by site and academic status. Changes in mean results of responses were judged for statistical significance..

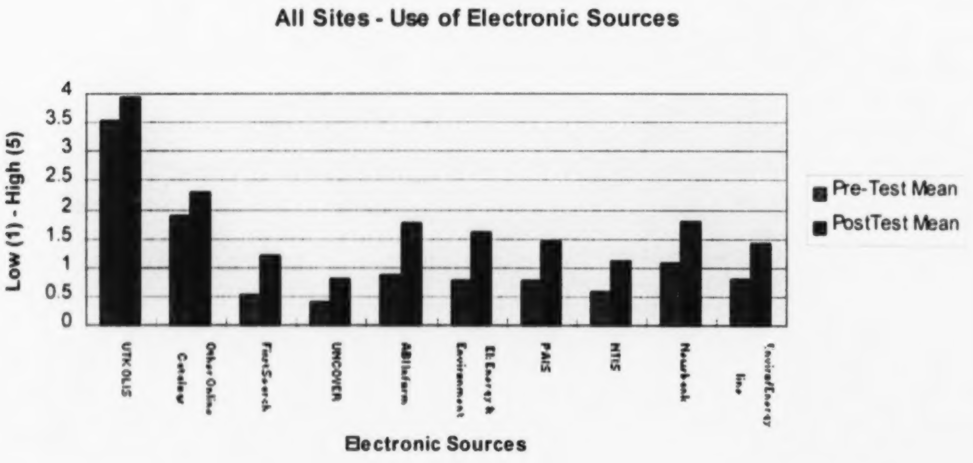
Use of Library Services.

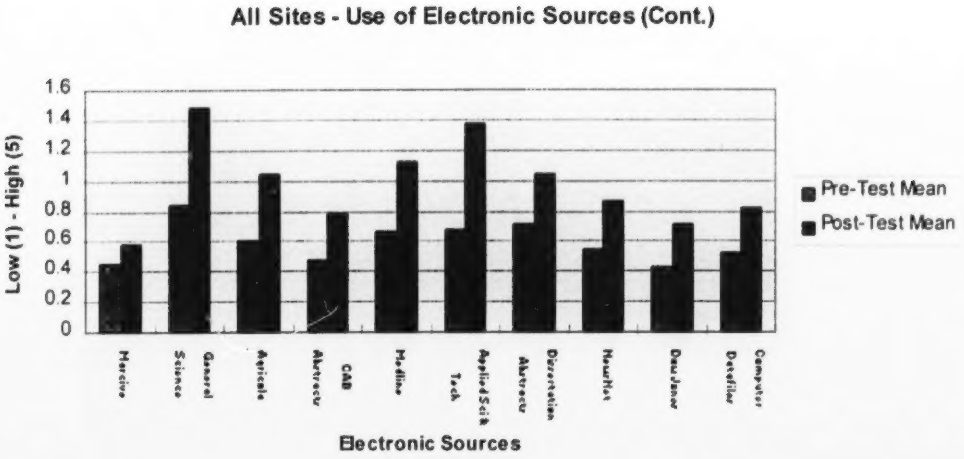
This section of the survey asked the respondents to assess use of library services including, reference assistance, interlibrary service, document delivery, library instruction, and online searches by librarians. Of these services reference assistance received the highest pre- and post-use ratings of 2.82 and 3.2 respectively and was the only service which demonstrated a statistically significant increase. The remaining services received lower post-use ratings ranging from 2.06 for interlibrary services to a low of 1.16 for document delivery. While the mean ratings for all of these other services increased slightly none of the increases was statistically significant.



Use of Electronic Information Sources.

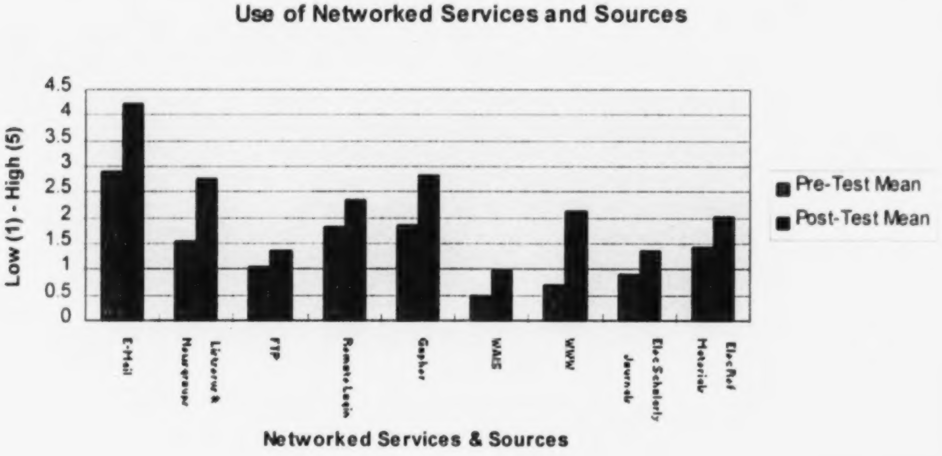
Overall usage ratings for sixteen of the twenty electronic information services examined by the survey increased by statistically significant amounts. CEB and Communications personnel reported statistically significant increased use of thirteen and twelve sources respectively . The greatest usage increases were reported by CEB respondents. CEB workstation users report that usage of four items: EI: Energy and Environment Index, Enviro/Energyline CD+, MEDLINE, and Applied Science and Technology increased by more than two points on a five point Likert scale. CEB usage of six other information sources including the FirstSearch online service, Computer Datafiles such as Genbank, and the NTIS, General Science Index, Agricola, and CAB Abstracts CD-ROMs increased by more than one point. Workstation users at Communications reported the use of the ABI Inform CD-ROM increase by more than a point. EERC was the only site whose responses indicated less usage of some items; however, none of these results were of a large enough magnitude to be statistically significant. CEB users focused on information sources for biology and environmental sciences. Users from Communications made use of electronic information sources about the environment, new, and business. Examination of the results by academic status reveals that graduate students and undergraduate students reported the most significant increases at thirteen and six respectively. Faculty did not report any significant increases and research associates and assistants only indicated a significant increase in use of the library's online catalog (OLIS).





Use of Network Services and Sources.

Use of all nine network services and sources increased. Usage of the World Wide Web (1.45), E-mail (1.38), Listservs/Newsgroups (1.23), and Gopher (.98) increased substantially. Users at Communications reported significant increases in seven out of the nine categories. The largest increases for Communications were E-mail (1.69), Listservs/Newsgroups (1.5) and the World Wide Web (1.31). CEB had five significant increases: World Wide Web (2.67), E-mail (1.67), FTP (1.5), Remote Login (1.25), and WAIS (1.18). On an academic basis, graduate students reported significant increases in five categories, undergraduates in four categories and research associates or assistants and faculty in one category.



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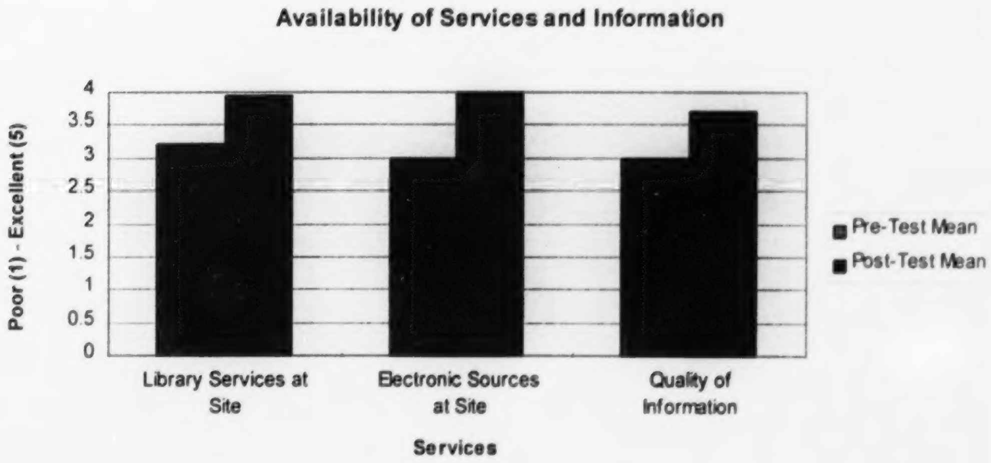
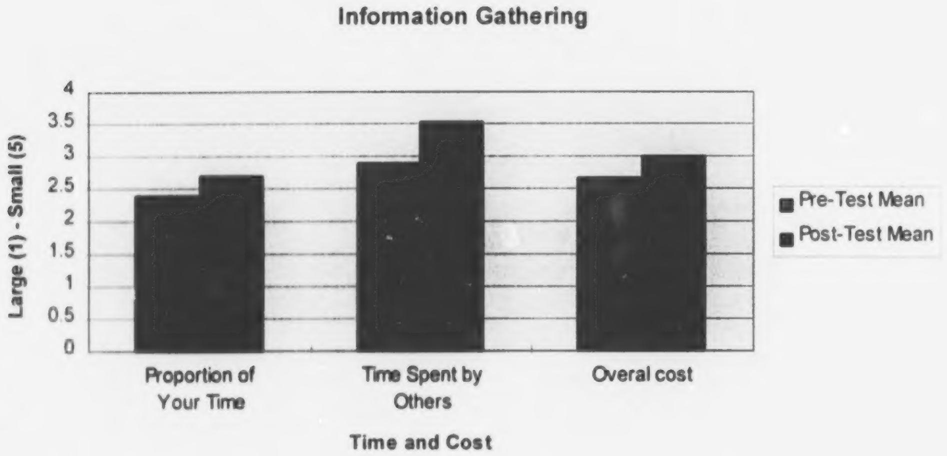
Availability of Services and Information.

The combined ratings for all sites for the availability of library services, availability of electronic sources and the quality of information gathered increased by significant amounts from the pre-surveys to the post-surveys. CEB reported statistically significant increases in all categories. EERC and Communications joined with CEB in reporting significant increases in availability of electronic sources.



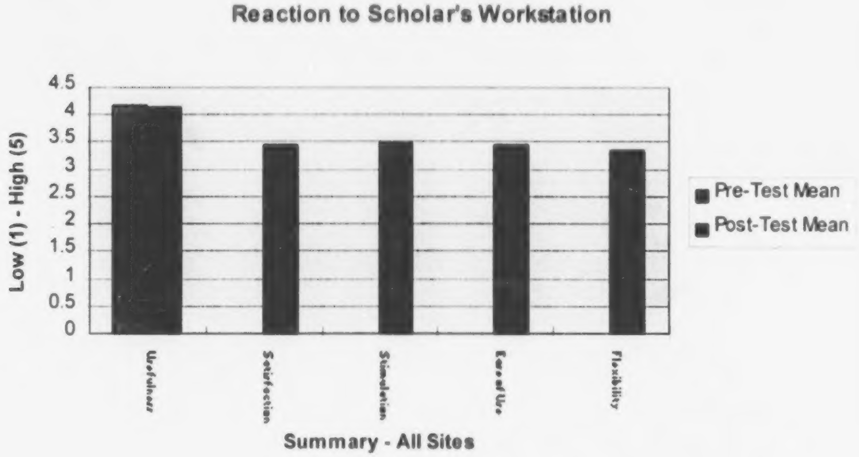
Information Gathering.

Responses indicated that the proportion of time spent gathering information and the cost of information gathering decreased, but not by significant amounts except in two areas: faculty reported a 57% decrease in time spent gathering information and graduate students reported a 43% decrease in the cost of gathering information. The one area in which all sites showed a significant decrease was time spent by someone else with a decrease of 22%. CEB users who work in small teams reported the greatest decrease in time spent by others at 116%.



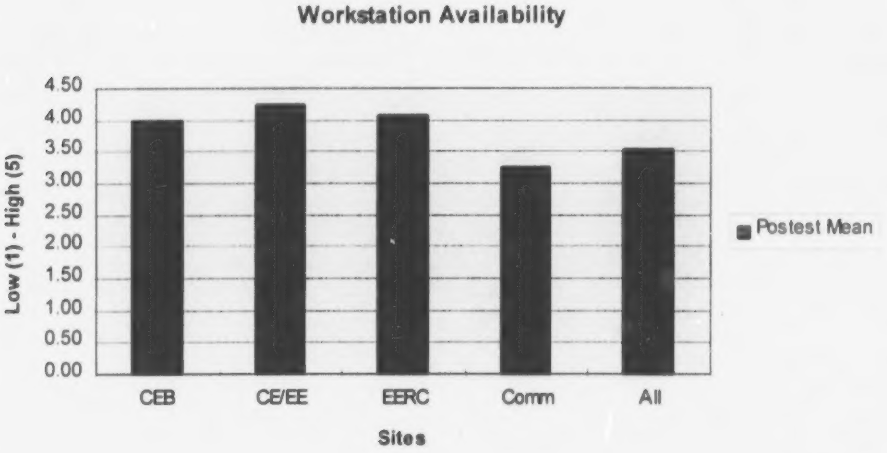
Reactions to the Scholars Workstation.

The post use survey rating of the workstation was very high and almost matched the high expectations shown in the pre use survey. The undergraduates provided the lowest post use ranking at 3.82. The faculty had the highest post test ranking, 4.55, followed by the graduate students, 4.33, and the research associates and assistants, 4.22. The users also gave relatively high rankings for their satisfaction with the workstation, the stimulation provided by the workstation, its ease of use, and flexibility. The undergraduates provided the lowest responses in each of these categories from 3.17 to 2.89. The ratings by the faculty, research associates and graduate students were in a higher band ranging from 4.10 to 3.40 with the responses of the faculty showing the greatest variation.

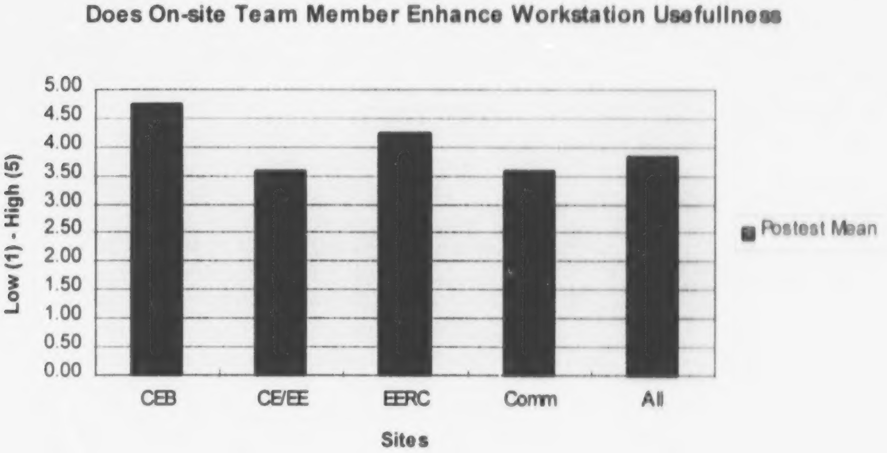


Availability and Assistance.

Users generally gave high ratings for the availability of the workstation. The Communications site which was not located in that college's computer lab and was closed at 5:00 p.m. received the lowest rating.


Workstation Availability

The effectiveness of the on-site team member also received high ratings. Since the majority of responses came from the College of Communications site, the lower rating by Communications respondents substantially lowered the overall rating.


Does On-site Team Member Enhance Workstation Usefullness

Observations.

Due to the small number of matching responses from Civil and Environmental Engineering (3) and post-doctoral researchers (3), all results from these groups should be discounted. The low number of responses from post-doctoral researchers was due to the low number of these personnel in the subject group. The low participation at the Civil and Environmental Engineering site was due to several factors. Only one class in this program made use of bibliographic citation databases. At the start of the project little material on the Internet was of use to Environmental engineers. Additionally few of the faculty were active Internet or E-mail users..

Enthusiasm of the Project Librarian led to inclusion of many Journalism classes not originally planned in the project design. Inclusion of this large number of undergraduates in the survey process strongly affected overall results.

Because no mailboxes were available for undergraduates at College of Communications, pre- and post-surveys were distributed through their classroom setting. Distribution in this setting may have influenced the results.

Increases in World Wide Web and E-mail use may have been influenced by the exponential increase in coverage of these services by the popular media.

Some of the increase in CD-ROM products may have resulted from announcements of these products through campus publications and the UTK Librarian our library newspaper.

Some local increase in use of all electronic information sources and services may have resulted from increased awareness of local LANs and Internet tools on the part of the administration and faculty at the sites.

Conclusions.

There was a great overall increase in use of the Internet and network tools. Use of the World Wide Web, E-Mail, and Listservs and Newsgroups increased substantially at all sites. Increased use of other Internet tools was site specific. Use of FTP and Remote Login increased greatly at CEB. Researchers at CEB used FTP to download biology related software and to transfer lengthy reports and large amounts of data to and from researchers at distant sites. Researchers at CEB also made use of Remote Login to collaborate with remote researchers. Journalism students at Communications made significantly increased use of electronic journals.

Use of electronic information sources including online catalogs and databases and CD-ROMs also expanded measurably. Survey responses indicated that use of 80% of the electronic information sources increased by significant amounts. Increased used of these assets was generally site and subject specific. Sources which covered a broad range of interests such as FirstSearch and Uncover demonstrated increases at all sites. Overall increases in other sources such as the CD-ROM based bibliographic databases were mostly caused by substantially increased usage at one or two sites which had the most interest in those subjects. CEB reported increased use of CD-ROMs which covered biology and the environment. Communications reported increased use of environmental, journalistic and business sources.

While all academic ranks reported regular use of the workstations, graduate students and undergraduates reported the greatest increases in use of workstation resources. Graduate students had the largest increases reporting increases in use of 55% of Internet resources and 65% of CD-ROMs and other electronic information sources. Undergraduates reported significantly increased usage of 44% of Internet resources and 44% of CD-ROMs and other electronic information sources.

An additional factor in determining workstation usage and availability of services was the distance to Hodges Library. Workstation users at CEB, the most remote of the workstation sites, reported the largest increases in use of both Internet services and electronic information sources. CEB was located twelve miles from the main campus. The other sites were all located on the main campus within a 10 minute walk of the library. Travel to Hodges Library from CEB requires at least 30 minutes. The correlation of the major difference in distances and the larger increases in use of workstation capabilities indicates a greater role for scholar's workstations at remote sites. The significance of this differential was also supported by the extremely large increases in the ratings of the availability of library and electronic services at CEB during the course of the project.

Appendix 7a: Survey Pre-Test

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MODEL SCHOLAR'S WORKSTATION
REGISTRATION/USER PROFILE

The Model Scholar's Workstation on the Electronic Frontier offers access to library resources and services at a site convenient to faculty, researchers and students. Your responses to this survey will help us assess the usefulness of an electronic branch library to faculty and students. We expect the survey to take less than ten minutes to complete.

While your participation in this study is completely voluntary, your response will contribute greatly to the validity of the research. All responses will be kept confidential. Only the researcher will have access to the names of participants which will be stored separately from the survey responses. Only aggregate data will be reported to the funding agency and in any resulting publications.

Your consent to participate in this study is implied when you complete the questionnaire and return it to me. If you have any questions about the study, please contact Dr. Richard Pollard, Rm. 307 Temple Court, University of Tennessee, 804 Volunteer Blvd., Knoxville, TN 37996-4330, or call (615) 974-8026.

Please provide the following information so that we may send you a follow-up questionnaire at a later date.

Name (Last, First, Middle): ______________________________

UTK Department/Unit: ______________________________

Campus Address: ______________________________

Campus Telephone: ______________

E-mail address: ______________

Please continue to the next page

__ ___

1. ACADEMIC STATUS

Please check one.

- ☐ (A) Faculty
- ☐ (B) Post Doctoral Fellow
- ☐ (C) Research Associate/Assistant
- ☐ (D) Graduate Student
- ☐ (E) Undergraduate Student
- ☐ (F) Other (please specify): ______________________________

2. USE OF LIBRARY SERVICES

Please circle the number that most appropriately reflects your current level of use of the following library services. If you have never used a particular service, circle NA.

		Rarely				Frequently	
2.1	Reference assistance	1	2	3	4	5	NA
2.2	Interlibrary Services (ILS)	1	2	3	4	5	NA
2.3	Document delivery service (Library Express)	1	2	3	4	5	NA
2.4	Library instruction	1	2	3	4	5	NA
2.5	Online search performed by a librarian on your behalf	1	2	3	4	5	NA

2.6 Other (please specify services and usage frequency using the same rating scale as above).

3. USE OF ELECTRONIC INFORMATION SOURCES

For each item, please circle the number that most appropriately reflects your level of use during the last four months. If you did not use a particular electronic information source, circle NA.

		Rarely				Frequently	
3.1	UTK Online Library Catalog	1	2	3	4	5	NA
3.2	Online catalogs (other than UTK)	1	2	3	4	5	NA

Please continue to the next page

4. USE OF NETWORK SERVICES AND SOURCES

For each item, please circle the number that best describes your level of use for teaching/research/course-work during the last four months. If you did not use a particular service, circle NA.

		Rarely				Frequently	
4.1	Electronic mail (E-mail)	1	2	3	4	5	NA
4.2	Computer conferences/Listservs/USENET news groups	1	2	3	4	5	NA
4.3	File transfer (FTP)	1	2	3	4	5	NA
4.4	Login to remote online catalog/databases/archives	1	2	3	4	5	NA
4.5	Gopher	1	2	3	4	5	NA
4.6	WAIS	1	2	3	4	5	NA
4.7	World Wide Web (e.g., Mosaic, Cello)	1	2	3	4	5	NA
4.8	Electronic scholarly journals	1	2	3	4	5	NA
4.9	Electronic reference materials	1	2	3	4	5	NA

4.10 Other (please specify services/sources and usage frequency using the same rating scale as above).

5. AVAILABILITY OF SERVICES AND INFORMATION

For each item, please circle the number that most appropriately reflects your opinion about…

		Poor				Excellent	
5.1	Availability of library services at your site.	1	2	3	4	5	NA
5.2	Availability of electronic information sources at your site.	1	2	3	4	5	NA
5.3	Quality of information gathered from electronic sources.	1	2	3	4	5	NA

Please continue to the next page

6. INFORMATION GATHERING

Please circle the number that is most appropriate to the information gathering activities performed in connection with your teaching/research/course-work during the last four months. Information gathering activities include finding articles, reports, books, and items in electronic form.

		Large				Small	
6.1	Proportion of your time spent gathering information	1	2	3	4	5	NA
6.2	Amount of time spent by someone else on your behalf	1	2	3	4	5	NA
6.3	Overall cost (including time) of gathering information	1	2	3	4	5	NA

7.0 Please circle the number that most appropriately reflects your opinion about the utility of a public workstation providing electronic access to a range of information services/resources. This workstation would be installed in a public area at your site.

Useless				Useful	
1	2	3	4	5	NA

Thank you for your participation.

Please fold and seal (staple or tape) this questionnaire before returning by campus mail.

Jeff Heck, Project Librarian
Scholar's Workstation Project
Hodges Library
1015 Volunteer Blvd.
Campus -1000

Appendix 7b: Survey Post-Test

MODEL SCHOLAR'S WORKSTATION
QUESTIONNAIRE

The Model Scholar's Workstation on the Electronic Frontier offers access to library resources and services at a site convenient to faculty, researchers and students. Your responses to this survey will help us assess the usefulness of an electronic branch library to faculty and students. We expect the survey to take less than ten minutes to complete.

While your participation in this study is completely voluntary, your response will contribute greatly to the validity of the research. All responses will be kept confidential. Only the researcher will have access to the names of participants which will be stored separately from the survey responses. Only aggregate data will be reported to the funding agency and in any resulting publications.

Your consent to participate in this study is implied when you complete and return the questionnaire. If you have any questions about the study, please contact Dr. Richard Pollard, 307 Temple Court, University of Tennessee, 804 Volunteer Blvd., Knoxville, TN 37996-4330, or call (615) 974-8026.

Please make any necessary corrections to the information printed on the attached mailing label. If a mailing label is not attached to this sheet, please provide the following information.

Name (Last, First, Middle): ______________________________

UTK Department/Unit: ______________________________

Campus address: ______________________________

Campus Telephone: ______________

E-mail address: ______________

If you received this questionnaire during a class, please include the following information.

Course department and number: ______________________

Course title: ______________________________

Instructor name: ______________

Please return the completed questionnaire by April 27, 1995.

1. USE OF SCHOLAR'S WORKSTATION

How many times have you personally used the Scholar's Workstation? Please check one.

☐ (A) Never
☐ (B) 1 time
☐ (C) 2-5 times
☐ (D) 6-10 times
☐ (E) 11+ times

2. USE OF LIBRARY SERVICES

Please circle the number that most appropriately reflects your current level of use of the following library services. If you have never used a particular service, circle NA.

		Rarely				Frequently	
2.1	Reference assistance	1	2	3	4	5	NA
2.2	Interlibrary Services (ILS)	1	2	3	4	5	NA
2.3	Document delivery service (Library Express)	1	2	3	4	5	NA
2.4	Library instruction	1	2	3	4	5	NA
2.5	Online search performed by a librarian on your behalf	1	2	3	4	5	NA

2.6 Other (please specify services and usage frequency using the same rating scale as above).

3. USE OF ELECTRONIC INFORMATION SOURCES

For each item, please circle the number that most appropriately reflects your level of use during the last four months. If you did not use a particular electronic information source, circle NA.

		Rarely				Frequently	
3.1	UTK Online Library Catalog	1	2	3	4	5	NA
3.2	Online catalogs (other than UTK)	1	2	3	4	5	NA

Please continue on the back

4. USE OF NETWORK SERVICES AND SOURCES

For each item, please circle the number that best describes your level of use for teaching/research/course-work during the last four months. If you did not use a particular service, circle NA.

		Rarely				Frequently	
4.1	Electronic mail (E-mail)	1	2	3	4	5	NA
4.2	Computer conferences/Listservs/USENET news groups	1	2	3	4	5	NA
4.3	File transfer (FTP)	1	2	3	4	5	NA
4.4	Login to remote online catalog/databases/archives	1	2	3	4	5	NA
4.5	Gopher	1	2	3	4	5	NA
4.6	WAIS	1	2	3	4	5	NA
4.7	World Wide Web (e.g., Mosaic, Cello)	1	2	3	4	5	NA
4.8	Electronic scholarly journals	1	2	3	4	5	NA
4.9	Electronic reference materials	1	2	3	4	5	NA

4.10 Other (please specify services/sources and usage frequency using the same rating scale as above).

5. AVAILABILITY OF SERVICES AND INFORMATION

For each item, please circle the number that most appropriately reflects your opinion about…

		Poor				Excellent	
5.1	Availability of library services at your site.	1	2	3	4	5	NA
5.2	Availability of electronic information sources at your site.	1	2	3	4	5	NA
5.3	Quality of information gathered from electronic sources.	1	2	3	4	5	NA

Please continue on the back

6. INFORMATION GATHERING

Please circle the number that is most appropriate to the information gathering activities performed in connection with your teaching/research/course-work during the last four months. Information gathering activities include finding articles, reports, books, and items in electronic form.

		Large				Small	
6.1	Proportion of your time spent gathering information	1	2	3	4	5	NA
6.2	Amount of time spent by someone else on your behalf	1	2	3	4	5	NA
6.3	Overall cost (including time) of gathering information	1	2	3	4	5	NA

7. REACTIONS TO THE SCHOLAR'S WORKSTATION

If you have *never* used the Scholar's Workstation, please skip to section 9.

For each item please circle the number that most appropriately reflects your opinion of the Scholar's Workstation installed at your site.

7.1	Useless				Useful	
	1	2	3	4	5	NA
7.2	Frustrating				Satisfying	
	1	2	3	4	5	NA
7.3	Dull				Stimulating	
	1	2	3	4	5	NA
7.4	Difficult				Easy	
	1	2	3	4	5	NA
7.5	Rigid				Flexible	
	1	2	3	4	5	NA

8. AVAILABILITY AND ASSISTANCE

Was the Scholar's Workstation available when you needed it?

8.1	Never				Always	
	1	2	3	4	5	NA

Does the assistance provided by the on-site team member enhance the usefulness of the Scholar's Workstation?

8.2 Not at all Very much
1 2 3 4 5 NA

9. OTHER REACTIONS, IMPRESSIONS, AND COMMENTS

Thank you, your continued participation is appreciated!

Please fold and seal (staple or tape) this questionnaire before returning by campus mail.

Appendix 8: Sample from Local Publications about Scholar's Workstation

This is the final INFORMATION ISSUES contribution for this academic year. If you have suggestions for INFORMATION ISSUES topics, please send them to Angie LeClercq, 120 Hodges Library: leclercq@utklib.lib.utk.edu

Information Issues

Provided by the University Libraries

THE REMOTE SCHOLAR'S WORKSTATION AT UTK

BY GAYLE BAKER AND JEFF HECK

Successful research depends in part on an awareness of information resources and the tools needed to locate and use those resources. Libraries have traditionally provided expertise in locating and assisting in the use of tools for finding information. New media and means of transmitting information, however, will mean changes in the way libraries perform this function. As information becomes available at the desktops of scholars, how will they search? Which tools will be the best to use for their needs? Will these changes in turn create new patterns of library service?

One possible model for information retrieval and sharing currently under examination by the University Libraries offers access to local, national, and international electronic information at sites convenient to faculty, researchers, and students. Four pc-based workstations, connected to the UTK campus network, were installed during February at campus locations associated with the environmental sciences. Because environmental science covers multiple disciplines, it provides an ideal theme for investigating use patterns in a single subject by varied users.

Services provided by the "Model Scholar's Workstation on the Electronic Frontier" grant focus on:

- Instruction in the use of the workstation and its information tools
- Documentation of all services provided
- Expert assistance from subject specialists at the UTK Libraries
- Access to electronic information services: OLIS online catalog, the Library's networked CD-ROMs, various Internet resources, electronic mail, and electronic discussion groups. Electronic titles made available specifically for this grant-funded research project include the National Technical Information Service (NTIS) CD-ROM, Engineering Index (EI) CD-ROM, and NewsNet, a current newsletter service that includes a focus on environmental affairs.

Funded in part by a Title II-A grant from the U.S. Department of Education, the study assesses the value of the workstations and their associated services to the participants.

Dr. George Everett, professor of journalism, conducts a search for CD-ROM information. Heather Walton, onsite team member, (seated) and Jeff Heck, project librarian, provide assistance. The workstation is in the Communications Building Reading Room.

Graduate students from the Graduate School of Library and Information Science serve as on-site team members for up to 15 hours per week. They work with other team members to provide training and to connect individuals to appropriate electronic resources. This opportunity provides GSLIS students with some firsthand interaction with scholars. "The project offers a good opportunity for library school graduates. We work closely with researchers and educators on the leading edge of environmental research," says Heather Walton. "We work to help them use electronic resources and tools as they become available."

Team members have presented more than 20 training sessions at the sites since February.

At least one participant in the study has found the project of value above and beyond his expectations. "We are just scratching the surface of what is possible," says Dr. Jack Barkenbus, acting director of the Energy, Environment and Resources Center. "Not only does it bring a central library to the Center, it obviates the need for a unit library and personalizes the information resources for each project," he says. "I've become a believer."

The project bases workstations at the Center for Environmental Biotechnology, the College of Communications, the Energy, Environment and Resources Center, and the Department of Civil and Environmental Engineering. For more information about the Scholar's Workstation project, contact: Jeff Heck, Project Librarian, 974-0087, heck@utklib.lib.utk.edu

OR

Gayle Baker, Project Coordinator, 974-3519, baker@utklib.lib.utk.edu

Robb Scholten, onsite team member for the Scholar's Workstation project, assists Gail Farris, senior research assistant for the Energy, Environment and Resources Center.

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Information Issues

Provided by the UTK Libraries Staff

CATALOGS AND OTHER UT INFO AVAILABLE ON WORLD WIDE WEB

The UTK undergraduate and graduate catalogs are available on the World Wide Web. They are maintained by the UT Office of University Relations which also offers other current information about the University on the Web including: The Tennessee Alumnus; *the* WUOT Program Guide; *the Sculpture Tour, including photographs;* Science Bytes, *a series of features on UT research for use by teachers and students; UT Bicentennial information; and facts about all UT campuses as well as access to many of the campuses' servers.*

To access the UT information, the URL is: http://loki.ur.utk.edu/default.html

THE WORLD WIDE WEB JUGGERNAUT

BY BILL BRITTEN
Systems Office
University Libraries

It's hard to avoid news coverage of the "information superhighway" these days. Call it what you want—National Research and Educational Network (NREN), Infobahn, I-way—it is attracting a frenzy of national interest not seen since the race to the moon. While most citizens await delivery of the promised information riches, for the academic community the future is now—in the form of the Internet.

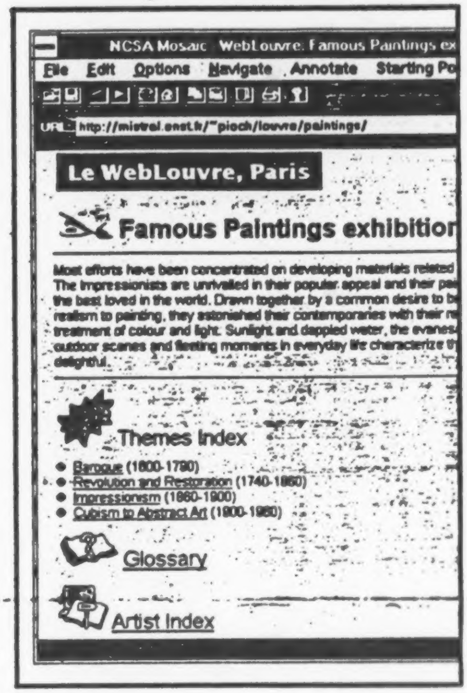
Two years ago the UTK Libraries launched the expanded Online Library Information System—the first gopher service at UTK. The new OLIS service has become extremely popular both with the UTK community and to residents of the Knoxville area, as a way of exploring the Internet. Statistics gathered over eight days in July show that our OLIS server responded to over 42,000 requests during the period. About half of the requests came from the "public" service running on the UTCC Vaxcluster—the service reached with the C LIBRARY command. The other half came from workstations directly connected to the network, both at UTK as well as anywhere on the Internet.

The centerpiece of Internet information services today is the World Wide Web (WWW), and the word most associated with WWW is Mosaic. While gopher was a phenomenon in the academic community two years ago, Mosaic is a "killer application" of much broader appeal. Remember VersaCalc, the first spreadsheet program that launched the microcomputer revolution? Mosaic is the VersaCalc of the Information Superhighway, and it is launching the network revolution right now.

Last December the UTK Libraries announced the first WWW service at UTK. Since then over a dozen other UTK WWW services have been announced, but the Libraries' server still attempts to be a comprehensive information source. Within our service you can take a walking tour of Paris and visit the Louvre's exhibits of art masterpieces. You can view an animation of weather pattern changes over the last 24 hours, listen to Bulgarian folk music, or search the Human Genome Database and display genetic maps. New information services are announced so rapidly that it has become difficult to evaluate and incorporate them into our service.

How to connect to this marvelous resource? As you might expect, the stakes are a little higher to use a service that offers graphics, sound, and video. To use Mosaic (or any other software that can talk to a WWW server), you must be directly connected to the Internet. That is, you must have a PC, Macintosh, or workstation with an Ethernet card, and you must have your own Internet address. Call UTCC at 4-6616 for details of how to meet these requirements. Also, Mosaic is a multimedia tool that requires the graphical environment of Windows, a Macintosh, or an X-terminal. It is not possible to use Mosaic from a Vax or IBM mainframe account.

Feel free to stop by the reference area at the Hodges, AgVetMed, or Music libraries, where there are public workstations with Mosaic, or call me at Library Systems (4-4304) for more information. Finally, for those who already have Mosaic, the Libraries' URL (Universal Resource Locator) is: http://gopher.lib.utk.edu/


NCSA Mosaic WebLouvre: Famous Paintings ex
File Edit Options Navigate Annotate Starting Po
URL: http://mistral.enst.fr/~pioch/louvre/paintings/

Le WebLouvre, Paris

Famous Paintings exhibitio

Most efforts have been concentrated on developing materials related
The Impressionists are unrivalled in their popular appeal and their pa
the best loved in the world. Drawn together by a common desire to b
realism to painting, they astonished their contemporaries with their n
treatment of colour and light. Sunlight and dappled water, the evanes
outdoor scenes and fleeting moments in everyday life characterize th
delightful.

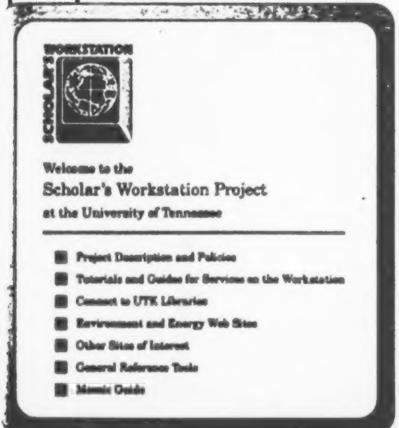
Themes Index

- Baroque (1600-1790)
- Revolution and Restoration (1740-1860)
- Impressionism (1860-1900)
- Cubism to Abstract Art (1900-1960)

Glossary

Artist Index

Tour the Louvre via the Internet! This is one of many wonderful resources available through the Libraries' World Wide Web server.



Welcome to the
Scholar's Workstation Project
at the University of Tennessee

- Project Description and Policies
- Tutorials and Guides for Services on the Workstation
- Connect to UTK Libraries
- Environment and Energy Web Sites
- Other Sites of Interest
- General Reference Tools
- Mosaic Guide

Also on the World Wide Web:

The Scholar's Workstation Project offers access to library resources and services, including training and reference assistance, at sites convenient to faculty, researchers, and students. The focus is on the environment and energy. To read more about the Scholar's Workstation consult our homepage: http://gopher.lib.utk.edu:70/0/UTK-Online-Catalog/sws/htmls/homepg.htm

You can also reach this information from the Libraries' homepage (select "UTK Libraries Services," then "Scholar's Workstation").

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Men who fought for the cause/ page 4

New hope for headache sufferers/ page 2

THE DAILY BEACON

THE UNIVERSITY OF TENNESSEE, KNOXVILLE

FRIDAY
FEBRUARY 17, 1995

Scholar's Workstations now open

BARBARA SMALL
Daily Beacon Staff Writer

In an effort to encourage the use of electronic resources, UT offers the Scholar's Workstation, a computerized branch library. The project includes four work sites with access to many of UT libraries' databases.

In addition, the stations have on-site graduate students from the School of Information Sciences who man the stations 10 to 15 hours per week to help users.

"We're trying to encourage people to get into electronic communications," said Gayle Baker, project coordinator.

Funded by a grant from the Department of Education, the project included the installation of four computer workstations in February 1994, Baker said.

"In a location convenient for researchers and students, we hoped to provide an electronic branch library with reference assistance and training to see how it would work as a model for library service," said Jeff Heck, project librarian.

Three locations are on campus: the Energy, Environment and Resources Center in 331 South Stadium Hall, Environmental Engineering in 209 Perkins Hall and the Reading Room of the College of Communications, 300 Communications Building.

The fourth location is off-campus at the Center for Environmental Biotechnology on Pellissippi Parkway.

The project's focus on environmental sciences is reflected in its emphasis on the science-related databases. Each workstation has access to UT-Knoxville library CD-ROM databases including Environmental Abstracts, National Technical Information Services (NTIA), Public Affairs Information Services (PAIS) and the Applied Science and Technology Index, Heck said.

"These databases can provide information from the Department of Commerce, technical reports, Department of Energy documents, NASA materials — practically any kind of technical document," Baker said.

The project also offers assistance in obtaining and using an electronic mail account and facilitates scholarly communication by encouraging the transfer of information, Baker said.

Heck said that in September the grant for the project will run out. At that time, the workstations will become the property of their current locations.

"I think the project's been very successful in helping to connect researchers and students with library resources available on line," Heck said.

UNIVERSITY LIBRARIES
The University of Tennessee, Knoxville

October 12, 1993

Contact:
Angie LeClercq, Special Assistant to the Dean of Libraries
120 John C. Hodges Library
The University of Tennessee, Knoxville
Knoxville, TN 37996-1000
Phone: 615-974-4273
FAX: 615-974-2708

The University of Tennessee, Knoxville Libraries have received $122,298 from the U.S. Department of Education to fund "A Model Scholar's Outpost on the Electronic Frontier." The grant was awarded competitively under Title IIA of the Higher Education Act. The goal of the project is to create library-supported Scholar's Workstations that provide convenient, timely user access to information in or near the scholar's workplace. Using the Scholar's Workstation as the prototype for an individual workstation of the future, librarians will demonstrate current and emerging technologies in an electronic version of a branch library. Four personal computer workstations will be installed in campus locations where students and faculty engage in study of the environmental sciences—Environmental Engineering, the Energy Environment and Resources Center, the College of Communications, and the Center for Environmental Biotechnology on the Pellissippi Parkway. Librarians and graduate/library information science students will provide training, software development, and reference assistance. The research component of the project will describe usage patterns of the Scholar's Workstation.

The project will be directed by Gayle Baker, Electronic Services Librarian. Other members of the Scholar's Workstation Team include Marty Courtois, Jeff Heck, Angie LeClercq, Tamara Miller, Linda Phillips, Richard Pollard, and Jane Row. The project is eligible for second-year funding on a non-competitive basis, contingent on federal appropriations.

Sent to:
University Relations
Library Journal
C&RL News
American Libraries
Chronicle of Higher Edu.

Bicentennial Edition

The UTK Librarian

Volume 10, Number 1 Newsletter of the University of Tennessee, Knoxville Libraries Fall 1994

UT Celebrates Charter Day

Charter Day, September 12, 1994 marked the 200th anniversary of the founding of the University of Tennessee. Charter Day highlights for the UTK Libraries included (clockwise from upper left): a ceremony honoring UT alumni inducted into the Alumni Academic Hall of Fame, featuring an address by author Wilma Dykeman; a procession and convocation of all University faculty; lectures on library research for the public; and demonstrations of electronic and multimedia resources.

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Grant-funded Projects

Distributed Access to Library Resources: The Scholar's Workstation

by Jeff Heck, Project Librarian, The Scholar's Workstation Project

> *"I have taken all knowledge to be my province."*
>
> Francis Bacon
> (Letter to Lord Burleigh, 1592)

Researchers today face an enormous variety of sources from which to pull the knowledge they seek. With resources expanding to electronic format, how can this quantity of information be handled?

The "Model Scholar's Workstation on the Electronic Frontier" offers assistance. The project provides access to national and international electronic resources, and supplies training and help in their use. Informally titled the Scholar's Workstation Project, the study supplies personnel and resources to four sites on campus. The Energy, Environment and Resources Center (EERC), the College of Communications, Civil and Environmental Engineering (CE/EE), and the Center for Environmental Biotechnology (CEB) each serve as a site for the study, which has an environmental focus.

The project provides instruction in use of local tools, such as the networked CD-ROMs and the online catalog (OPAC) available through the library. Classes at the sites provide training to larger groups. Small group sessions are repeated for many of the tools, and individual instruction is always available. The project also provides training and demonstration for Internet tools such as gopher, Usenet newsgroup readers, and World Wide Web browsers such as Mosaic. Project personnel provide support for basic VAX use, including CAFE accounts and Electronic Mail. They also provide pointers to locally developed software to help in retrieving material, such as an electronic interlibrary loan request form available through the gopher.

Since activation of the workstations in February of this year, the project has also provided basic classes on bibliographic software use and understanding operating systems such as DOS and Windows. Instruction has been tailored to the needs of each site.

Onsite Team Members, graduate students from the School of Information Science, provide 15 hours of work per week for each site. They work with other Team members to provide training and to connect individuals to appropriate electronic and print resources. These Team members have also contributed to developing documentation for the resources offered at the sites. Paper guides for seven CD-ROM products, some of which were purchased specifically for the project, are available at the sites. More recently, hyperlinked guides to CD-ROMs provided by the project, including *Engineering Index* and *Environmental Abstracts,* have been placed on the World Wide Web. Connect through Mosaic to: http://gopher.lib.utk.edu:70/0/UTK-Online-Catalog/sws/htmls/homepg.htm (please enter the address exactly as typed, with upper and lower case letters).

In the electronic form of the guides, screen shots of the actual CD-ROM screens have been included, with permission of the vendors. In addition to new versions of the guides, the pages contain pointers to a number of environmental sites appearing on the Web.

The Scholar's Workstation Project tests a new model for library activity, distributing access to library resources across campus. One of the most valuable resources made available to project participants is the assistance of subject specialists in the Reference Department. Team members help researchers connect with information experts in their field when additional help is needed.

The sites vary greatly in their need for information. CEB, for example, has found great value in being able to connect to genome databases in Europe, where

"TAP IN"
To a World of Knowledge

At the Scholar's Workstation sites:
Above: College of Communications—professor George Everett at the workstation
Left: EERC—senior research assistant Gail Farris at the workstation

Right: Iko Bullington develops customized screens for the Scholar's Workstation project.

they can run searches for DNA segments. Team members have identified environmental organizations for researchers, such as the Environmental Resources Information Center in Australia, which links to dozens of environmental sites, and the Environmental Resources Coalition, which offers full-text of working papers.

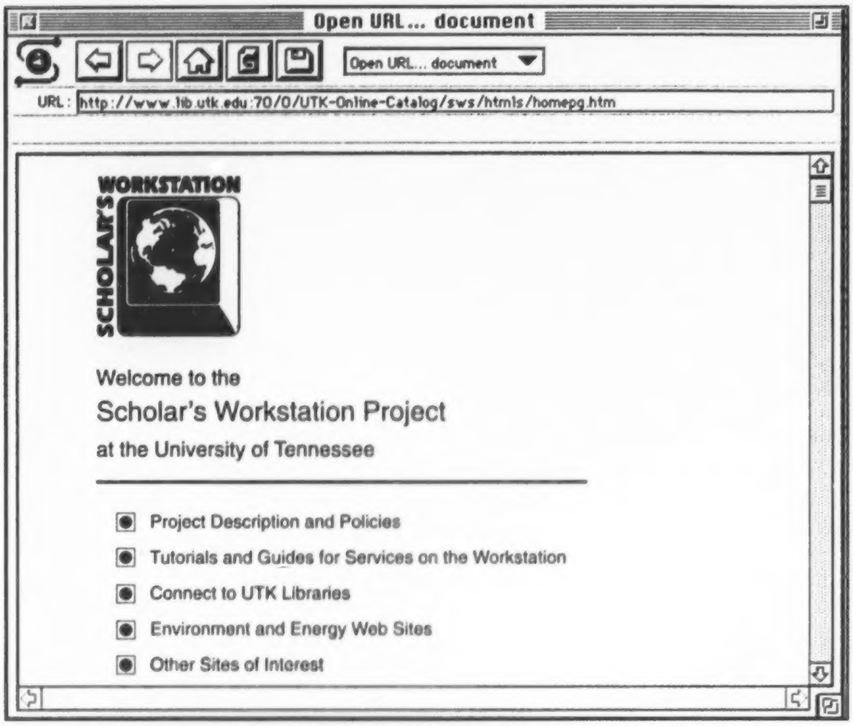
Users of the workstations appreciate the convenience of a trainer and assistance in their research. "It saves us time, educating people on a day-to-day basis," said Jim Fleming, a Post-Doctoral researcher at the Center for Environmental Biotechnology. "Another advantage of having the Scholar's Workstation here has been a reduction in mainframe costs due to training and less use time," he said. "As things become more complex in the future, it will become more and more important to have someone with specialized training."

Professor Ed Caudill, School of Journalism, and Dean Dwight Teeter, College of Communications, both feel that students can make good use of the resources offered. "I've had graduate students who've used it for hours," said Professor Caudill. "After they've used it once, it [use of workstation] just explodes," he says. "Students are finding things they didn't used to find," said Dean Teeter. "I think it's these improved search methods."

Funded in part by an HEA Title II-A grant from the United States Department of Education, the study began in October, 1993 and will continue through the end of September, 1995. Results of the study will be presented to the library and information science profession through journal articles, posters sessions, and presentations on campus.

Analysis of the survey results may lead to new patterns of library use and service. If this model proves a success, it will provide a method for researchers and students at other libraries and campuses to expand the province of their knowledge without becoming buried in information.

Anyone who would like more information about the project may contact: Gayle Baker, Project Coordinator (974-3519), or Jeff Heck, Project Librarian (974-0087).



URL: http://www.lib.utk.edu:70/0/UTK-Online-Catalog/sws/htmls/homepg.htm

Welcome to the

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- ● Other Sites of Interest

The Scholar's Workstation homepage on the World Wide Web, located at URL "http://gopher.lib.utk.edu:70/0/UTK-Online-Catalog/sws/htmls/homepg.htm"

The Scholar's Workstation crew (left to right): Onsite Team Members Aaron Dobbs, Iko Bullington, Alan Goslen, John Noel (seated), David King, and Project Librarian Jeff Heck

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Financial Status Report

Part III – Financial Statistics Report Attachment
Budget Summary 1993 through Sept 1995 (Year 1)

	UT Funds Budgeted	UT Funds Spent	DE Funds Budgeted	DE Funds Spent	Total Budgeted	Total Spent
1. Salary and Wages					**$ 67,396.00**	**$ 66,687.94**
7 Key Personnel	$ 22,996.00	$ 22,996.00			$ 22,996.00	$ 22,996.00
Project Librarian			$ 30,000.00	$ 27,289.84	$ 30,000.00	$ 27,289.84
GSLIS Students (@ $8.50/hour, 30 weeks)			$ 14,400.00	$ 16,402.10	$ 14,400.00	$ 16,402.10
2. Fringe Benefits					**$ 14,839.00**	**$ 12,693.15**
7 Key Personnel	$ 6,439.00	$ 6,439.00			$ 6,439.00	$ 6,439.00
Project Librarian			$ 8,400.00	$ 6,254.15	$ 8,400.00	$ 6,254.15
3. Travel					**$ 1,426.00**	**$ 516.48**
To / From Pellissippi Campus						
30 mile round trip @ $0.22 / mile for 12 months (24 days per month)			$ 1,426.00	$ 516.48	$ 1,426.00	$ 516.48
4. Equipment					**$ 36,500.00**	**$ 35,508.18**
DEC InfoServer and Client Software			$ 16,000.00	$ 10,800.68	$ 16,000.00	$ 10,800.68
PC, Monitor, Printer, Software for 4 Sites $3,151 / workstation			$ 12,604.00	$ 16,255.00	$ 12,604.00	$ 16,255.00
PC, Monitor, Printer, Software for Project Librarian			$ 3,246.00	$ 3,113.50	$ 3,246.00	$ 3,113.50
Ethernet cards for 4 sites & Project Librarian $150 / site			$ 750.00	$ 701.00	$ 750.00	$ 701.00
LCD Projection Unit (Laptop Computer)			$ 3,900.00	$ 4,638.00	$ 3,900.00	$ 4,638.00
5. Supplies					**$ 2,000.00**	**$ 2,000.00**
Printing / Duplication for User Aids	$ 2,000.00	$ 2,000.00			$ 2,000.00	$ 2,000.00
6. Contractual Services					**$ 15,084.00**	**$ 15,084.00**
CD-ROMs (prorated costs)						
Enviro/Energyline CD+	$ 1,767.00	$ 1,767.00			$ 1,767.00	$ 1,767.00
General Science Index	$ 98.00	$ 98.00			$ 98.00	$ 98.00
PAIS	$ 399.00	$ 399.00			$ 399.00	$ 399.00
Marcive Monthly Catalog	$ 100.00	$ 100.00			$ 100.00	$ 100.00
NTIS (for 2-8 LAN)	$ 1,283.00	$ 1,283.00			$ 1,283.00	$ 1,283.00
EI: Energy & Environment (for 2-8 LAN)	$ 4,572.00	$ 4,572.00			$ 4,572.00	$ 4,572.00
Newsbank Index (single station)	$ 865.00	$ 865.00			$ 865.00	$ 865.00
FirstSearch (8,400 searches @ $0.50 / search)			$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 4,000.00
NEXIS (Dow Jones)			$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00
7. Other					**$ 2,880.00**	**$ 2,912.00**
Network Connections:						
Add new port to 327 S. Stadium Hall			$ 500.00	$ 500.00	$ 500.00	$ 500.00
Add new node to 302 Communications Bldg.			$ 500.00	$ 500.00	$ 500.00	$ 500.00
Extend Ethernet node to Pellissippi Bldg. A			$ 500.00	$ 500.00	$ 500.00	$ 500.00
Add new port to Ethernet node at 209 Perkins			$ 500.00	$ 500.00	$ 500.00	$ 500.00
Monthly port charge for all active ports: 4 ports @ $10 / month for 12 months	$ 480.00	$ 480.00			$ 480.00	$ 480.00
Personal Bibliographic Management software 1 copy @ $100 for each of 4 sites			$ 400.00	$ 432.00	$ 400.00	$ 432.00
8. Total Direct Costs	$ 40,999.00	$ 40,999.00	$ 99,126.00	$ 94,402.75	$ 140,125.00	$ 135,401.75
9. Total Indirect Costs (37% less equipment)	$ 15,169.63	$ 15,169.63	$ 23,171.62	$ 23,224.75	$ 38,341.25	$ 38,394.38
Totals, Year 1	$ 56,168.63	$ 56,168.63	$ 122,297.62	$ 117,627.50	$ 178,466.25	$ 173,796.13

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Part III – Financial Statistics Report Attachment
Budget Summary 1993 through Sept 1995 (Year 2)

	UT Funds Budgeted	UT Funds Spent	DE Funds Budgeted	DE Funds Spent	Total Budgeted	Total Spent
1. Salary and Wages					**$ 76,717.00**	**$ 76,746.62**
7 Key Personnel	$ 25,117.00	$ 25,117.00			$ 25,117.00	$ 25,117.00
Project Librarian			$ 31,200.00	$ 30,922.03	$ 31,200.00	$ 30,922.03
GSLIS Students (@ $8.50/hour, 40 weeks)			$ 20,400.00	$ 19,707.59	$ 20,400.00	$ 19,707.59
2. Fringe Benefits					**$ 15,769.00**	**$ 14,059.70**
7 Key Personnel	$ 7,033.00	$ 7,033.00			$ 7,033.00	$ 7,033.00
Project Librarian			$ 8,736.00	$ 7,026.70	$ 8,736.00	$ 7,026.70
3. Travel					**$ 6,901.00**	**$ 6,226.26**
To / From Pellissippi Campus						
30 mile round trip @ $0.22 / mile for 12 months (24 days per month)			$ 1,901.00	$ 1,202.82	$ 1,901.00	$ 1,202.82
Professional Conferences to Desseminate Progress Reports - 5 Conferences @ $1,000			$ 5,000.00	$ 5,023.44	$ 5,000.00	$ 5,023.44
4. Equipment					**$ 7,500.00**	**$ 6,839.40**
Unix Workstation			$ 7,500.00	$ 6,839.40	$ 7,500.00	$ 6,839.40
5. Supplies					**$ 1,000.00**	**$ 1,000.00**
Printing / Duplication for User Aids	$ 1,000.00	$ 1,000.00			$ 1,000.00	$ 1,000.00
6. Contractual Services					**$ 16,300.00**	**$ 16,360.00**
CD-ROMs (prorated costs)						
Enviro/Energyline CD+	$ 1,250.00	$ 1,250.00			$ 1,250.00	$ 1,250.00
General Science Index	$ 130.00	$ 130.00			$ 130.00	$ 130.00
PAIS	$ 399.00	$ 399.00			$ 399.00	$ 399.00
Marcive Monthly Catalog	$ 80.00	$ 80.00			$ 80.00	$ 80.00
CAB Abstracts	$ 850.00	$ 850.00			$ 850.00	$ 850.00
Agricola	$ 124.00	$ 124.00			$ 124.00	$ 124.00
Medline	$ 371.00	$ 371.00			$ 371.00	$ 371.00
NTIS (for 2-8 LAN)	$ 1,584.00	$ 1,584.00			$ 1,584.00	$ 1,584.00
EI: Energy & Environment (for 2-8 LAN)	$ 4,321.00	$ 4,321.00			$ 4,321.00	$ 4,321.00
Newsbank Index (single station)	$ 891.00	$ 891.00			$ 891.00	$ 891.00
FirstSearch (8,400 searches @ $0.50 / search)			$ 4,200.00	$ 4,260.00	$ 4,200.00	$ 4,260.00
NewsNet (140 hours @ $15 / hour) (Dow Jones)			$ 2,100.00	$ 2,100.00	$ 2,100.00	$ 2,100.00
7. Other					**$ 480.00**	**$ 480.00**
4 ports @ $10 / month for 12 months	$ 480.00	$ 480.00			$ 480.00	$ 480.00
8. Total Direct Costs	$ 43,630.00	$ 43,630.00	$ 81,037.00	$ 77,081.98	$ 124,667.00	$ 120,711.98
9. Total Indirect Costs (39% less equipment)	$ 17,015.70	$ 17,015.70	$ 28,679.43	$ 27,394.61	$ 45,695.13	$ 44,410.31
Totals, Year 2	$ 60,645.70	$ 60,645.70	$ 109,716.43	$ 104,476.59	$ 170,362.13	$ 165,122.29

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FINANCIAL STATUS REPORT

(Short Form)

REVISED

(Follow instructions of the back)

1. Federal Agency and Organizational Element to Which Report is Submitted: U. S. DEPARTMENT OF EDUCATION

2. Federal Grant or Other Identifying Number Assigned By Federal Agency: R197D30002-94

OMB Approval No. 0348-0039

Page 1 of 1 pages

3. Recipient Organization (Name and complete address, including ZIP code)
University of Tennessee
201 Andy Holt Tower
Knoxville, Tn 37996-0100

4. Employer Identification Number: 1626001636A1

5. Recipient Account Number or Identifying Number: B01990114/R01601130

6. Final Report: ☒ YES ☐ NO

7. Basis: ☒ Cash ☐ Accrual

8. Funding/Grant Period (See Instructions) From: (Month, Day, Year) 10/01/93 To: (Month, Day, Year) 09/30/95

9. Period Covered by this Report From: (Month, Day, Year) 10/01/94 To: (Month, Day, Year) 09/30/95

10. Transactions	I Previously Reported	II This Period	III Cumulative
a. Total outlays	100,367.96	122,607.84	222,975.80
b. Recipient share of outlays	687.71	183.98	871.69
c. Federal share of outlays	99,680.25	122,423.86	222,104.11
d. Total unliquidated obligations			
e. Recipient share of unliquidated obligations			
f. Federal share of unliquidated obligations			0.00
g. Federal share (Sum of lines c and f)			222,104.11
h. Total federal funds authorized for this funding period			232,014.00
i. Unobligated balance of Federal funds (Line h minus line g)			9,909.89

11. Indirect Expense

a. Type of Rate (Place "X" in appropriate Box)
☐ Provisional ☒ Predetermined ☐ Final ☐ Fixed

b. Rate	c. Base	d. Total Amount	e. Federal Share
.38%	9,199.46	3,587.79	30,798.41
.39%	70,242.58	27,394.61	

12. Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation

13. Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purposes set forth in the award documents.

Typed or Printed Name and Title: GAIL WHITE, GRANT AND CONTRACT MANAGER

Telephone (Area code, number, and extension): (423) 974-2493

Signature of Authorized Certifying Official: Original Signed By GAIL WHITE

Date Report Submitted: January 22, 1996

Previous Editions not Usable

Standard Form 269A (REV 4-88)
Prescribed by OMB Circulars A-102 and A-110

FINANCIAL STATUS REPORT

(Short Form)

(Follow instructions of the back)

REVISED

1. Federal Agency and Organizational Element to Which Report is Submitted U. S. DEPARTMENT OF EDUCATION	2. Federal Grant or Other Identifying Number Assigned By Federal Agency R197D30002-93	OMB Approval No. 0348-0039	Page 1 of 1 pages

3. Recipient Organization (Name and complete address, including ZIP code)

University of Tennessee
201 Andy Holt Tower
Knoxville, Tn 37996-0100

4. Employer Identification Number 1626001636A1	5. Recipient Account Number or Identifying Number B01990114/R01601127	6. Final Report |X| YES | | NO	7. Basis |X| Cash | | Accrual
8. Funding/Grant Period (See instructions) From: (Month, Day, Year) 10/01/93	To: (Month, Day, Year) 09/30/95	9. Period Covered by this Report From: (Month, Day, Year) 10/01/93	To: (Month, Day, Year) 09/30/94

10. Transactions	I Previously Reported	II This Period	III Cumulative
a. Total outlays	0.00	100,367.96	100,367.96
b. Recipient share of outlays	0.00	687.71	687.71
c. Federal share of outlays	0.00	99,680.25	99,680.25
d. Total unliquidated obligations			18,131.25
e. Recipient share of unliquidated obligations			183.98
f. Federal share of unliquidated obligations			17,947.27
g. Federal share (Sum of lines c and f)			117,627.52
h. Total federal funds authorized for this funding period			122,298.00
i. Unobligated balance of Federal funds (Line h minus line g)			4,670.48

11. Indirect Expense	a. Type of Rate (Place "X" in appropriate Box) |_| Provisional	|X| Predetermined	|_| Final	|_| Fixed
	b. Rate .38% .39%	c. Base 38,368.84 15,201.32	d. Total Amount 20,508.67	e. Federal Share 19,820.96

12. Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation

13. Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purposes set forth in the award documents.

Typed or Printed Name and Title GAIL WHITE, GRANT AND CONTRACT MANAGER	Telephone (Area code, number, and extension) (423) 974-2493
Signature of Authorized Certifying Official Original Signed By GAIL WHITE	Date Report Submitted January 22, 1996

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